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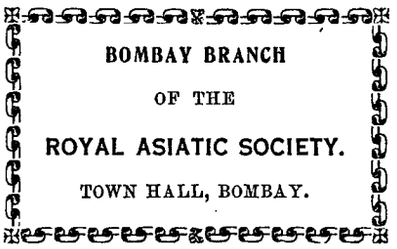

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ANNUAL REPORT

OF THE

DEPARTMENT

OF

LAND RECORDS AND AGRICULTURE,

PUNJAB,

For the year ending 30th September 1894.

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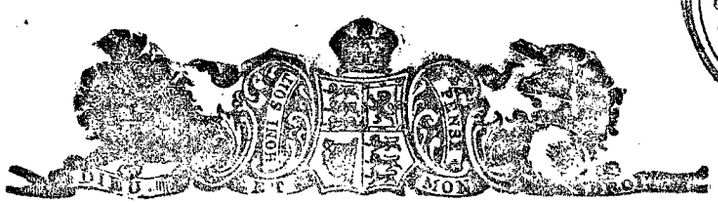

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Lahore:
THE "CIVIL AND MILITARY GAZETTE" PRESS,
Contractors to the Punjab Government.

1895.

No. 130, dated Lahore, 5th March 1895.

From—R SYKES, Esquire, C.S., Offg. Senior Secretary to the Financial Commissioner, Punjab,
To—The Revenue Secretary to Government, Punjab.

I AM directed to submit the Progress Report of the Department of Land Records and Agriculture, Punjab, for the year 1893-94, and to convey the following remarks of the Financial Commissioner.

2. Mr. Francis held charge of the office or Director for two months, and Mr. Robertson for ten months of the year under report.

3. As regards the Patwári agency generally, the Financial Commissioner concurs in Mr. Robertson's remarks in paragraph 13. There can be no doubt that the Patwári of the present day is a much more efficient man than was formerly the case. This is partly owing to his improved pay and partly to the career opened out to him by rule 104 (ii) of the rules under the Land Revenue Act, which provides that the majority of the accepted candidates for Kánúngoship shall, if possible, be Patwárís. This has produced an immense change in the demand for these appointments. The Financial Commissioner agrees with the Director that in time the hereditary principle now observed under rule 9 (i) of the rules above referred to in the appointment of Patwárís will have to be abandoned. The appointment of Patwári affords training and opportunities for rising to higher posts in the subordinate Revenue service, and the initial recruitment must ultimately be independent of hereditary claims. What the Financial Commissioner would like to see in time would be the institution of a qualification of a very different character, *viz.*, that the majority of such appointments should be conferred on agriculturists. The Financial Commissioner also agrees with Mr. Robertson that the transfer of Patwárís should be avoided as far as possible.

4. The question of the disposal of Patwári funds is one of great importance. The recent decision to meet part of the cost of the Kánúngo establishment by a contribution from this fund has been followed by a proposal made by the Government of India to provincialize the Patwári fund, while during the past year an expenditure of Rs. 44,415 has been sanctioned from the fund for "patwár-khánás." The whole subject will shortly be referred for the orders of Government.

5. Selections for Kánúngoship are not always carefully made. More attention should be paid to these in view of the remarks made in paragraph 2 above. It is also necessary that care should be taken not to confer Kánúngos' certificates to a greater extent than is warranted by the average number of vacancies occurring annually. If two many Patwárís qualify, the standard should be raised.

6. Mr. Robertson remarks that the Revenue Assistant is sometimes the weakest link in the chain of official supervision of the revenue record work. It is essential to the working of the department that this officer should be thoroughly capable. The Financial Commissioner thinks that there are in the service now more Extra Assistant Commissioners fitted for the work of Revenue Assistants than formerly, but there is still room for improvement. The Director will be requested to bring to the notice of the District Officer any cases in which the supervision of this officer is effective or the reverse.

7. The Financial Commissioner has always been in favour of extending the sphere of the Director's duties to districts under settlement. He will not need to go into the same details in these districts, but he can render valuable service to the Settlement Officer, who will no doubt be glad to receive it.

8. The attention of the District Officers concerned will be drawn to the Director's remarks in paragraphs 9 to 13 of the report.

9. In conclusion I am to say that Mr. Robertson's inspection notes are thorough, and the Financial Commissioner derives much benefit from his advice. His supervision of the work is effective, and his visits are helpful and acceptable to Deputy Commissioners.

Punjab Government Press, Lahore—3-4-95—381.

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No. 267.

FROM

FRED. A. ROBERTSON, ESQUIRE, C.S.,

Director of Land Records and Agriculture, Punjab,

To

R. SYKES, ESQUIRE,

Senior Secretary to Financial Commissioner, Punjab.

Dated LAHORE, *9th February* 1895.

SIR,

Introductory.

1. I have the honor to submit the Annual Progress Report of the Department of Land Records and Agriculture, Punjab, for the year 1893-94.

Charge of office.

2. Mr. Francis held charge of the office from 30th September to 1st December, when I relieved him on my return from furlough.

Director's tour.

3. During the two months he held charge, Mr. Francis visited the head-quarters of three districts and five tahsíls. He spent 19 days on tour, travelling 362 miles by rail. After taking over charge, I visited the head-quarters of 19 districts and 34 tahsíls, visiting the circles of 41 kánúngos. I travelled 5,697 miles by rail and 519 miles by road.

The districts in which I did actual marching under canvass, were Lahore, Gujránwála, Jhang, Siálkot, Shahpur and Muzaffargarh. I took the opportunity of marching through the new colony on the Chenáb Canal and visited Shahkot with a view to assist the Colonization Officer in the preparation of the new records and to advise on various questions connected therewith.

I inspected the work of patwárís in the field from time to time, both during the crop inspection and at other times. It is most desirable to do this from time to time in order to see how far the inspecting officers really do their work of inspection, to see how our record system actually works in the fields and villages, to test how far our mutation work is actually up to date, and to keep oneself thoroughly posted in the actual work of the patwári who is our "revenue unit." The actual spot where the shoe pinches, is often only to be got at from patwárís themselves, and I always encourage patwárís whose papers I examine to talk freely of their work and explain to me what parts of it they find difficult. The conclusion I have come to, is, that a fairly intelligent patwári can do all the regular work required of him without undue strain. It is when extra and irregular work is imposed on him, that he becomes unequal to his task. I have found that the examination of the work of a few patwárís' circles often gives me insight into the work of a much larger tract than the circle itself. The object with which a Director inspects a patwárí's papers is of course not to find out whether that individual patwári is a good one or not, but to discover how the inspecting officers supervise him and how far the record work is conducted on a sound and proper system. In one district, especially the inspection of a few patwárís' papers, revealed the very backward state of the mutation work, and at the same time one special cause for it in extra work connected with the registration of canal labour due from cultivators. This question has since been carefully gone into and more satisfactory arrangements made for the future. I note this as an instance. Further remarks on the results of inspections will be found below.

The work of inspection at tahsíls and the head-quarters of districts was carried on as usual.

Kánúngos' examination.

4. Examinations of kánúngos and candidates for the office of kánúngo were held at the head-quarters of five districts during the year. Eighty-four candidates presented themselves for examination, of whom 58 passed. There are sufficient passed candidates in most districts now, and it is not desirable to multiply the number who hold kánúngos' certificates far beyond the number of possible vacancies. I have noticed a tendency to try and make use of this examination as a means of obtaining a certificate to be used elsewhere. I am consequently very strict never to grant a certificate of efficiency to candidates merely as the result of oral and written examination. Smart young men who have passed the Entrance Examination often appear and pass the examination room test, who have done little or no practical work. These are never certified as efficient until they have done a year's work actually as a patwári, or in the field learning the work of a patwári. Candidates are always either first or second grade patwáris or men who have passed the Entrance Examination. The latter class are usually smartest at examination work. I must repeat the remarks made by Mr. Francis last year, that the patwári candidates do not always justify their selection. In some cases patwáris utterly unfit for the post of kánúngo were sent up to me for examination. This was notably the case in the Karnál district. District Officers might reasonably be expected to exercise more care in the selection of candidates, and the number on the list should be kept down to actual requirements.

Kánúngo agency.

5. The number of unpassed kánúngos is now only six. It sometimes happens that the best candidate, when a vacancy occurs, may not have had an opportunity of presenting himself for examination, but there are now so many passed candidates that an unpassed one should be very rarely appointed.

Patwári establishment.

6. The patwári establishment did not undergo extensive revision in any district. Some revision took place in Kángra and Kohát on the conclusion of settlement operations, and slight changes or additions took place elsewhere. The rate of patwári cess was revised in the Lahore and Shahpur districts at the conclusion of settlement operations.

Patwári Fund Account.

7. No further change of system has occurred. I was anxious to introduce the system of paying patwáris by money order, to avoid the necessity of calling patwáris into the tahsíl to receive their pay. With this object, after obtaining the sanction of the Financial Commissioners, I proposed to the postal authorities to permit the transmission of a patwári's monthly pay, whatever the amount, by money order on payment of the lowest rate of fees, *i. e.*, two annas per money order. As our patwáris' monthly pay ranges from Rs. 8 to 16, which latter is the maximum, the proposal seemed not an unreasonable one, and one which any commercial firm would accept at once; but I regret to say that the Director-General of the Post Offices did not see his way to adopt the principle of "reduction on taking a quantity" and declined to make any special terms for the 8,000 money orders which would have had to be sent monthly. The scheme was therefore dropped, and as different methods for the disposal of the patwári fund surplus have since been adopted, it is not likely to be soon revived.

During the past year it has been decided that under the Land Revenue Act patwári funds may be legally called upon to contribute to the cost of the kánúngo establishment, and a contribution of Rs. 70,810 will accordingly be made from the surplus patwári funds of the Province during each of the next three years.

A proposal to provincialize the district patwári funds of the Province is now under consideration.

Residence of patwáris within their circles.

The necessity of insisting on the rule that patwáris should live with their families within their circles has continued to attract attention. Under the orders of the Financial Commissioner, where large balances exist in the patwári fund of any district, proposals may be entertained for the employment of a portion of it in providing

"patwárkhánás," *i.e.*, houses with offices for patwáris, and the expenditure of Rs. 44,415 has been sanctioned from patwári funds for this purpose in various districts.

Some difference of opinion exists on the subject, and the solution of the question has not been arrived at without difficulty. It is felt that to compel a patwári to live within his circle and not to find him a place to live in, is hard on him. In many districts a patwári can easily hire a house, but in others where there are no large village sites, but only scattered hamlets, it is practically impossible for him to find a dwelling. The present orders seem to meet the difficulty as far as it can be met, and they amount to this. Where there is sufficient surplus in the patwári fund of any district it may be drawn upon, with the Financial Commissioner's sanction, for the construction of patwárkhánás. Where there are no funds available, but the patwári can hire a house in one of the villages of the circle, he must do so. Where it is clearly shown that there are no funds to build a house and no houses to be hired, the rule may be relaxed. The practice of calling on the landowners and cultivators to build a patwárkhána has been strictly forbidden. The chief difficulty is encountered with patwáris who reside in towns at no very great distance from their circles. These much prefer town life, and it is very difficult to make them live in their circles. The same is the case with a patwári whose native village is not actually in, but near his circle. There is of course no difficulty with a patwári whose own village is in his circle. It would therefore seem best in this connection, either to have patwáris who actually belong to their circles, or when this is not the case to have them too far away from their own villages, for it is to be possible for them to frequent them constantly to the detriment of their work. Considerable improvement has been effected during the year. The question requires somewhat delicate treatment which it has perhaps not always received at the hands of very young officiating District Officers.

In some districts the practice of transferring patwáris is far too common, and I would suggest that Deputy Commissioners themselves should prevent this from occurring. The Financial Commissioner has laid it down that transfers are not to be carried out as a punishment, and they should be avoided as much as possible on all grounds.

Record office.

8. The separation of records of rights and other village records from the other papers in the district office has been carried out in the Bannu, Ferozepore, Gujrát, Gurdáspur, Umballa, Lahore and Muzaffargarh districts, and is now in progress in Pesháwar and Shahpur.

General results of Director's inspections.

9. As regards my inspection of district and tahsíl offices, the following points are worthy of note :—

District record room.

District record rooms are generally kept in good order. In some places it is still the custom to keep the settlement record in the ordinary village bundle (*basta*). It is better to keep them separately even where it is not found possible to separate off the village records entirely from the rest of the record room. Forms and statements which ought to be destroyed are not now allowed to get into the bundles with the *jamabandís* to the extent which was once the case.

District kánúngo's office.

In Delhi the district kánúngo is very badly accommodated. He has no room to himself even, but shares one with other officials. In Ludhiána, where he was very badly provided for, suitable arrangements are being made. The new office room for the district kánúngo at Shahpur which is also to contain the village records is a nice one, but none too big.

Agricultural statistics at district offices.

The difficulty of making the returns kept up in the English office tally exactly with those kept by the assistant district kánúngo, mentioned in last year's report, still continues. The English records are copies of the statements sent to the Director of Land Records' office. The vernacular ones are compiled from those kept up in the tahsíls, and corrections which are often found necessary in the tahsíl statements are brought into the vernacular statements kept in the district kánúngo's office,

but not into the English registers. These are often somewhat faulty and require more care. Still some discrepancies are unavoidable, because the annual returns must be prepared by a prescribed date, and the kánúngos have not sufficient time to check and compare the figures. I always encourage the kánúngos to keep their note-books correct, though they may differ somewhat from the agricultural registers. The latter are for statistical purposes and if mistakes are discovered after they have been despatched, it is better that the note-books intended for assessment purposes should be corrected.

Standing and annual records.

Some of the standing and annual records are carefully examined at each tahsíl visited. This is a part of the work which is usually well done. The checking of annual records by field kánúngos is better done than it used to be, but is not always as careful as it should be.

In the Jhang district fields were clubbed on the maps in 1888, but the work was found to have been done so badly that great confusion followed. Endeavours were made from time to time to set the matter right, but to no purpose. It was finally decided that settlement field numbers should be restored in the annual records, cancelling the consolidation work. I have been carefully watching the progress of this work, and it is satisfactory to note that the work has nearly been finished with the exception that the maps have not been brought up to date. It is not possible to do this without much extra trouble and expense which it has been considered undesirable to incur at present, as the resettlement of the district must be commenced within a few years when the matter can be thoroughly and satisfactorily dealt with.

Tahsíls kánúngos' offices.

The tahsíl kánúngos' office rooms are generally in good order, and most office kánúngos are now provided with sufficient record rooms and offices. The office kánúngo at Rohtak tahsíl where the accommodation was very inadequate, has now been provided with a very nice room. The tahsíl record room at Ludhiána might easily be much improved by a slight alteration, which I suggested in my inspection note. This is also the case at Montgomery. In Háfizabad and Pind Dádan Khan the kánúngo shares a room with several other officials. But in general, tahsíl office kánúngos are now well accommodated and keep their offices in very fair order. I noticed a great improvement in regard to the removal of useless old papers.

Miscellaneous registers kept at tahsíls.

These are generally well kept. The work in Ludhiána, which was mentioned in last year's report as unsatisfactory, has improved. The register of patwárís' stationery was not correctly kept in Daska, Amritsar, Alipur and Rewári.

The register of mutation of names of lambardárs is now generally correctly kept. In the past year, however, I made a point of comparing the names in the register with those given in the *jamabandís*, and many mistakes were discovered. This was specially the case in Attock, Gujar Khan and Gujrát. In several cases it was found that changes were not brought on to the register.

The register of property hypothecated to Government contains mostly *takávi* cases, and as the land hypothecated in such cases is noted in the *takávi khatauni*, I think these cases may be omitted from this register which will reduce the work of the office kánúngo. The point is under consideration and proposals will shortly be submitted for the orders of the Financial Commissioners. I have noted that in many cases no remarks are made in the *jamabandís* showing what land is hypothecated to Government. It is important to do this, and I have been impressing its necessity on patwárís and other revenue officials.

Register of patwárís' circles, rule 133.

The register of mutation of patwárís' names has been cancelled, and this register now supplies its place and gives the necessary information. The statistics regarding villages comprised in a circle are revised when the detailed *jamabandís* are prepared; but I find that in many cases the figures for kánúngos' circles are not altered. It does not seem to be of much use to alter these figures every year, and I have therefore been giving directions to revise them every fourth year. Attock, Alipur and Muzaffargarh were the tahsíls in which this register was worst looked after.

Muáfi registers.

It is very important that the muáfi registers should be kept up to date, and in order to test their accuracy, cases have been compared with the assigned holdings in the annual records. Small differences were found in many districts, but Jhelum and Jhang were the worst in this respect.

Patwári fund accounts.

The patwári fund accounts are more correctly kept than formerly, but mistakes are often found in demand statements and balances due. The account was not correctly kept in Jhang, Sharakpur, Daska and Pind Dádan Khan. The mistakes discovered were of the following nature. In a great many cases outstanding balances of former years are altogether left out of account, and in some cases the figures for demand and collections do not agree with the rent roll and treasury figures. On my inspection of the head-quarters office of a district, I make a point of carefully examining each item of miscellaneous expenditure to see how far irregular expenses are incurred, and I am glad to note that this seldom occurs now; still occasionally irregular items are met with and placed under objection. Karnál was found to be worst in this respect during the year. In Jhelum some Rs. 326 were spent on the purchase of cloth for bundles without Financial Commissioner's sanction. This examination of patwár fund accounts has done a great deal of late years to reduce the expenditure from the fund and to increase the surplus.

Village and circle note-books.

During the first few years after their introduction, as might have been expected, the village and circle note-books were full of mistakes, both of method and execution. Steady improvement has gone on. They are always very carefully overhauled by my Personal Assistant and myself, and the totalling of the statistics carefully checked. As noted last year, the yearly statements are more correctly kept than the quadrennial ones. Very startling figures having been occasionally noticed in Statements Nos. VII and VIII of the village note-books among the entries of cash rents paid by tenants, special enquiry was made and instructions issued for future guidance. The difficulty was caused by the custom, universal in some places, of paying rent in a lump sum on holdings including both irrigated and unirrigated lands. The patwári did not know how to distribute the amount over the two classes, and great diversity of practice was the result. Instructions have been issued which will in future greatly modify the difficulty.

Totalling work was found defective in Ráwalpindi, Shahpur, Gujrát, Gujránwála, Bhiwáni and Pind Dádan Khan.

In the crop returns of the circle and tahsíl note-books, I find that either no detail of crops which failed is given, or where given every crop which failed (no matter how infinitesmal its area) has been totalled from village note-books and shown in the column of remarks. This entails useless labour, and I have therefore suggested that details of only the forecasted crops, as well as one or two other important ones, may be given. In many districts Part III of Statement No. VI (statement of ownership, mortgages and assignments) relating to statistics for assignments was found to be incorrect. In some cases figures for villages which are wholly assigned have been shown in the column which is meant for revenue held under assignment for which no land is specified. This was specially noticed in Amritsar and Gujránwála. In some cases *ináms* are altogether omitted from this statement, while in others, villages and holdings partly assigned are wrongly classed. In some cases large differences are discovered when comparison is made with the rent roll and the revenue account statement.

In many districts I have found that census figures have not been subdivided into agriculturists and non-agriculturists. It is a pity that the census returns do not give these totals, but abstracts can be made from one of the census registers, and this is being done in most districts at my suggestion.

The vernacular note-books of the Amritsar district do not contain any remarks in part 10 by the Settlement Collector or his assistant as a guide for the Tahsíldárs. The Settlement Collector's remarks in his English note-books should be translated and copied into the vernacular ones, and I have asked the Deputy Commissioner to have this done.

The experiment of keeping up counterparts of the vernacular village note-books in English is being made in several districts recently resettled. It is too early yet to say whether this has proved a success or not, but the matter is being kept carefully in view.

Tahsíldárs' remarks in village note-books.

The remarks of Tahsíldárs in village note-books are often common place in the extreme, and Tahsíldárs, as a rule, have great difficulty in understanding what to write. I have, however, on several occasions come across intelligent and useful notes, and I think that Tahsíldárs are gradually learning what is desired in this matter. They are often afraid to leave the statement blank when there is really nothing which they ought to record for fear that they should have been thought to have neglected this work. The remarks in the Attock and Alipur tahsíls were better than usual, and those in Delhi were distinctly good and useful.

Mutation work.

Mutation work is now one of the most important branches of the work of the subordinate revenue establishment, and it is a work which falls heavily in many tahsíls on Tahsíldárs and Náib-Tahsíldárs.

The absolute impossibility of the ordinary staff disposing satisfactorily of the work in some tahsíls led to an application to Government for special officers to assist the ordinary staff where the work was heaviest. In response to this appeal the employment of 10 Extra Náib-Tahsíldárs for eight months in the year to be employed exclusively in disposing of the excess of mutation work was sanctioned, and this has already proved a great boon to the revenue staff, though owing to the date on which sanction was received they were only employed for four months during the year under report. In some of the tahsíls where work was most congested the entire arrears have been cleared off and the Tahsíldárs left free for their other multifarious duties. Mutation work varies to an extraordinary extent. The smallest number attested in any district during the last year was 1,431 in Montgomery and the largest 52,928 in Hoshiárpur. It has been found that an extra Náib-Tahsíldár devoting himself entirely to this work can get through from 100 to 200 cases in a full working day. The number of mutations which were pending at the end of 1892-93 was 98,342. This was reduced to 76,311 at the close of 1893-94.

The mutation work is a matter into which careful enquiry is made at every inspection. I make it a practice to go through the entire files of rejected mutations and also a number of those which have been accepted. This of course only tests the work done; it does not show how much has been left undone, and this can only be done by collecting the right-holders in certain villages and going through the record and mutation register together. I cannot do this, but Collectors and Revenue Assistants should make a practice of doing it from time to time. The Deputy Commissioner of Muzaffargarh did so after my inspection and unearthed a large number of old mutations. Landowners and money-lenders are however gradually coming to realize the advantage to be derived from the entry of the title in the annual record, and in several districts it is now a common practice for money-lenders to endeavour to get their names entered in respect of land which is only hypothecated to them by way of collateral security, and in regard to which under the rules no mutation should be made. The plan adopted is to get the mortgagor to admit possession before the Revenue Officer when none has actually occurred.

Tahsíldárs and Náib-Tahsíldárs most often go wrong in regard to cases in which minors are concerned, where parties are absent and where owing to the season of the year actual possession cannot be made visible to the patwári. The doctrine of constructive possession is generally beyond them, and this leads to mistakes which are of anything on the right side. The attendance of parties is often difficult to obtain. Orders have been passed leaving it to the discretion of Collectors to permit mutations to be attested at the head-quarters of each patwári's circle, but I have found on tour that this plan is not adopted as frequently as it might be.

Employment of kánúngos on extraneous work.

Rules 116 and 117 provide that kánúngos are not to be employed on any work not prescribed in the rules without the express sanction of the Financial Commissioner. The extent to which

this rule is observed varies very much, but out of the districts visited by me during the year it is most systematically set aside as regards office kánúngos in Delhi and as regards field kánúngos in the Jhelum district. The field kánúngo of Lahore has much work to do in connection with the attachment of crops in execution of decrees, land acquisition cases and other miscellaneous work, and cannot pay proper attention to his own work.

Inspection by District Officers.

10. Under the orders of Government, I am called upon to report on the nature and extent of the inspection work done by District Officers and their Assistants. I have consequently made it a practice to go carefully through the inspection notes in the tahsíl books on each occasion of my visits. I find that it generally happens that the tahsíls least inspected are those at head-quarters. The tahsíls visited by me during the year were generally found to have been regularly inspected. The Deputy Commissioner's notes did not show that detailed inspections were made by them of the kánúngos' papers, but it is the Revenue Extra Assistant Commissioner who is expected to make thorough inspections of these records. The inspections by the Revenue Assistants of Ráwalpindi, Siálkot and Muzaffargarh were thorough and complete. The Revenue Assistants of Lahore, Jhang and Jhelum made hardly any inspections. The tahsíl of Gujránwála has never been inspected by the Revenue Assistant since the book was opened in 1888. It was only once inspected by the Deputy Commissioner in 1890.

Work of district kánúngos.

11. I always carefully examine the diary of the district kánúngo when I visit a district. The majority of these officials are now efficient men and they move about regularly. The touring is generally found to be fair and the inspections of the district kánúngos are usually satisfactory. The district kánúngo of Hissár spent 166 days on tour, and his inspections were thorough and searching. The large amount of extraneous work which was made over to the district kánúngo of Delhi interfered with his work, but it is satisfactory to note that he has now been relieved of it.

Field kánúngos.

The field kánúngos as a class are efficient men, but these are still men of the old school in the service, though their number is now decreasing. The result of my last year's inspection is to show that these officials do not do a sufficient amount of work. They are generally fond of writing long notes in their diaries, explaining what the patwári ought to do rather than what they actually do themselves. Their touring in the *girdáwari* months is generally regular, but not so in other months. Many circles are found to have been left unvisited for three or four months, and one field kánúngo in Hissár was found to have never visited a patwári's circle for six months consecutively. The field kánúngos of Umballa do their work very well, and also in Sonepat in the Delhi district. The Tahsíldár of Sonepat takes great interest in his work, and has succeeded in rousing his kánúngos to do their duty properly. Much depends on the way in which field kánúngos do their work, and it lies with the district kánúngos and the Revenue Assistants to see that they do it; with more and better supervision they could accomplish more than they do now.

Patwári candidates.

Educated patwárís are to be obtained in much greater number than formerly, and the educated patwári is a great improvement on the old stamp in morale as well as knowledge. We have always impressed on district officials that it is most desirable to employ men who have passed the Middle School Examination. In Ráwalpindi only 5 out of 29 were passed men, in Gujránwála only 8 out of 64 candidates had passed the test. In Siálkot hardly any had done so. In Gujrát there were 160 candidates on the list, a very excessive number.

Quarterly business returns.

12. Quarterly statements of progress in the maintenance of village records are scrutinized by the Director and submitted to the Financial Commissioner. By this means the progress of the mutation business, of the preparation of annual records, and the touring of officers and other cognate matters are constantly kept in view.

The return for the last quarter of 1894 from several districts brought to light a misapprehension which proved to be not uncommon among subordinate officials and to be shared by some European officials also. It is now laid down in order to secure uniformity of practice, that only mutations, which are attested

before the 15th June in any one year, are to be included in the annual records of that year. It is also laid down that the Tahsíldár and his Náib are to be in camp for alternate half month for seven months of the year. It is also said that during the remaining five months these officers are to spend as much time in camp as the Collector or Commissioner may direct. It has been assumed that because mutations attested after 15th June are not to go into the *jamabandi* of the current year, that no mutations need be written up or attested between 15th June and the end of the year, *i.e.*, 30th September, and also it has been assumed by some Tahsíldárs and others that because they have to be in camp for 15 days out of each of seven months they need do no touring in the other five. I have issued a Circular letter under the authority of the Financial Commissioner pointing out the error thus brought to light. This mistake would not have come to notice nearly so soon had it not been for the submission of these quarterly returns.

Duties of Director.

13. There has been no actual change in the duties of Director, but the formation of the Civil Veterinary Department has thrown a considerable increase of work, certainly of a very interesting character, upon the Director and upon his office. His inspections are altering somewhat in character. At first the chief subject for enquiry was whether the new rules and system were understood and put in force at all. Now that the general system is fairly understood, that the Land Revenue Act has been in force for seven years, and that many old inefficient subordinates have been weeded out, inspections are directed more to the comparison of office work with actual facts and to the check of the work itself.

Revenue staff.

A few remarks on the revenue staff with whom the Director of Land Records and Agriculture has to work, will not be out of place here. To begin at the head of the column, District Officers are naturally much better acquainted with the present system than they were during the past year or two after its introduction. Deputy Commissioners who have a thousand and one important matters to attend to, cannot be always engaged in revenue work, particularly record work. Their duty in the matter is mainly to see that the Revenue Assistants and subordinate staff do their work, and to do enough themselves to keep themselves thoroughly acquainted with the system, so as to exercise a thorough and intelligent supervision over it, and the main duty of the Director of Land Records and Agriculture as regards this part of his work is to assist District Officers to keep their subordinates up to the mark. The position of the Director of Land Records and Agriculture among his confriers is now fully understood by District Officers, and his visits are cordially received.

The case of Settlement Collectors is a little different. These are themselves experts specially chosen for the work, and after inspecting the work of the subordinate staff in districts under settlement I usually leave it to Settlement Collectors themselves to say on what points, if any, I can be of assistance to them, the Director of Land Records having no definite official connection with assessment work. I am not quite sure that Settlement Collectors might not, had they desired it, have obtained a little more aid from the Director of Land Records than they actually did in one or two cases within the last few years. Complete harmony has in every case marked the Director of Land Record's relations with Deputy Commissioners and Settlement Collectors, as I take this opportunity of noticing with gratitude to my brother officers. Occasionally a certain want of interest is shown which diminishes the value of my inspection to the subordinate staff, but this is not common, and when it does happen usually occurs in the case of young and inexperienced officiating officers.

As regards Revenue Extra Assistants I am in some doubt. This is sometimes the weak point in the chain; they have not always the settlement experience which is most desirable if not absolutely necessary, nor the energy nor the knowledge which is required for the post. It is most important that Revenue Assistants should be thoroughly capable men knowing their own work and capable of making their subordinates do theirs.

As regards the work which comes under my scrutiny, the class of Tahsíldárs and Naíb-Tahsíldárs is certainly improving.

Good district kánúngos are not easy to get. The majority are efficient men of good stamp, and the possibilities of promotion now open to them make it worth while for superior men to accept the post. The Director of Land

Records and Agriculture has the power of veto over this appointment, but the selection rests with the District Officers, and I rarely make objections. During the past year, however, with the concurrence of the Commissioner, I had to object to the selection made in the Ráwalpindi district, as the selected candidate had no knowledge of English and was, though a deserving official in other respects, unequal to the post.

The kánúngo staff is very much improved and is improving year by year though it is far from perfect. The number of candidates is large and if Collectors are careful in selection, good men can always be had to fill any vacancy which occurs.

As for the patwári, I think there is no doubt that we are now getting much better men than we once did. The educational qualifications are certainly much higher than they were. The pay and prospects of promotion have been very much improved of late years and the morale is better. The hereditary principle which is still in force to a large extent, prevents any rapid change in the class of patwáris employed as regards caste and race. Perhaps, before long, it may be possible to get rid of the hereditary principle altogether, but this has not yet been accomplished. Patwáris are the subject of much abuse. No doubt much of it is well deserved. Bribery, forgery, false claims and every kind of wickedness is laid to their door, and they are often spoken of as an army of miscreants let loose upon an ignorant people like wolves in a flock of sheep. There is a good deal of exaggeration in all this. The patwári has much in his hands under the present system, and he is not highly paid. On the other hand he is now subject to much closer supervision than formerly, and his possibilities of promotion are much greater. He is neither an angel of light, nor a monster of iniquity, but a subordinate native official who too often uses his opportunities for evil, but whose morale has improved and will improve with the improvement of his status. Just as after the French Revolution, every French soldier was said to carry a marshall's baton in his knapsack, so now every patwári can carry his gazette as an Extra Assistant Commissioner; and the possibilities of rising in the world which now exist for the patwári cannot fail to have a beneficial effect.

Agri-Horticultural Gardens, Lahore.

14. A separate report on the Lahore Agri-Horticultural Gardens, of which the Director is *ex-officio* President, is submitted annually.

Agricultural experiments.

15. There are no experimental farms in the Punjab. The Agri-Horticultural gardens do not afford very great scope for agricultural experiments, but for some years past a good deal of quiet and unobstrusive work in the direction of agricultural experiment, and the selection of seed has been going on in these gardens. The results have already been of considerable value, and seed of superior varieties of cereals has been distributed to many districts. At present, perhaps Palestine wheat and Egyptian cotton promise most; chocolate barley is a good variety but its colour appears to raise prejudice. Canadian and Danish barleys have done well. Canadian wheat has been a failure. These agricultural experiments are conducted under great difficulties. The soil is bad and the area very cramped. We are doing our very best to remedy this last defect: Further, the chaudhris in charge are gardeners rather than agriculturists, and the area under cereals and other farm crops does not justify the employment of an extra chaudhri. In addition the crops are grown in very exposed situations and there is unquestionably much pilfering of grain and straw. A good deal more grain is generally produced than is ever garnered; but notwithstanding the difficulties the results obtained are far from being valueless and efforts are here made to extend operations. The following is a description of an interesting experiment made in the garden on the reclamation of soil encrusted with saline deposits. It may give valuable results. So far it has proved a decided success. We have found it practically impossible to obtain any land for agricultural experiments in the neighbourhood of the garden, so we are endeavouring to reclaim some of the waste area of our own land which has hitherto been perfectly useless as well as being an eyesore.

"The whole of the land about the old brick mounds near the menagerie has always been considered as entirely unfit for cultivation. The soil is very

clayey, very saline and full of *kankar* and is also above the canal water level. A little more than half an acre of this land has been brought under cultivation by removing sufficient surface soil to bring it to irrigation level and thus also removing a great deal of the surface saline deposits. The lowered area was well ploughed; a top dressing of six inches of canal silt was spread over half an acre, a further experiment being tried by spreading three inches of sand on $\frac{5}{6}$ of an acre and three inches of burnt earth from the brick mounds on $\frac{1}{192}$ part of an acre."

"The whole plot was sown with huskless barley; where canal silt only was spread over the land, the crop throughout had a fair appearance, but did not grow so high as it did in other parts of the garden. The sanded part was the worst; the best barley stalk did not attain more than 15 inches in height. In the portion on which the burnt earth had been spread, the plants at first did not thrive very well, they however commenced to improve rapidly when the rainy season set in. The respective average outturns are as stated below:—

Portion dressed	by canal	silt	874 lbs. per acre.
„	„	sand	595 lbs. „
„	„	burnt earth	1,920 lbs. „

"In the present cold season the whole of the plot has been well ploughed up and manured at the ordinary rate and is now doing very well."

Maize. A supply of American corn seeds was sent to several districts from the Agri-Horticultural gardens for experiment, but on the whole the results were disappointing. The season was a very peculiar one and the seeds were in several cases destroyed by excess of rain. The superior yield of some of the American kinds when successfully grown over the indigenous kind is however well established and they are regularly grown in some districts.

Sorghum. No experiments were made with *sorghum* this year.

Cotton. Further experiments were made with Garo hill cotton, and though the season was peculiar, the results were encouraging.

The Egyptian cotton was tried in Peshâwar and in the Chenâb Colony. It ripens late and the results were not fully known when the reports were sent in. Further experiments will be made with it.

The Egyptian cotton received from Dr. Watts was tried in the Government Agri-Horticultural Gardens, but so far has proved inferior to that received from Mr. Duthie in the preceding year.

Wheat. Palestine wheat seems now to be fully acclimatized in the garden, and the experiments made in Karnâl gave very good results in grain, though the straw was considered coarse. This is a superior kind of wheat, and further experiments in wheat will be almost entirely restricted to this variety.

Barley. Chocolate barley does well in the garden, but its colour is objected to elsewhere. Other kinds of huskless barley have proved successful in previous years.

Canadian cereals. Canadian wheat and barley have been noticed above. Canadian oats have not on the whole been successful.

Rye. Further experiments with rye, the straw of which is in demand at the Government Gunpowder Factory, were made in the Agri-Horticultural gardens. 100 lbs. of the straw was sent to the factory. As however it is contemplated that a cheaper substitute for rye straw will be found, and as it does not pay to grow a supply for the straw alone, no further experiments will be made at present.

No further supply of English potatoes was distributed during the year.

English potatoes.

No report has yet been received from the Deputy Commissioner of Kángra regarding the supply of half a ton ordered out direct by him.

Potatoe disease.

No disease has been observed among potatoes in the Province during the year.

American sweet-potatoes.

The supply of American sweet-potatoes ordered from Virginia for experiment has not yet been received. It will be tried during the present year if obtained.

American vines.

American vine cuttings have done well in Siálkot, Gujránwála, and the Agri-Horticultural Gardens, Lahore, and fairly well in Kohát and Jhang. Those in the garden were received three years ago from Saháranpur, and some are now showing bloom.

No further reports have been received regarding the vine disease in Kanawar. Dr. Watt suggested the treatment of the vines with a strong decoction of the leaves of *adhatoda vasica*, but no report of the result of the experiment, if tried, has been received, as Mr. Minniken has been transferred from Bushahr for the summer months.

Swietenia macrophylla.

The seeds of the mahogany tree supplied for experiment to Delhi have produced good trees and several specimen are reported to be doing well in the Queen's and Roshanára Gardens.

Inga Dulcis Mimoseœ.

A quantity of the seed of Inga Dulcis Mimoseœ was obtained from Madras where it is said to form a really strong and useful fence. The sowings met with very varied success. The experiment was a failure in Mooltan, Ludhiána, Gurgáon, Montgomery, Karnál, Jullundur, Ferozepore and in other places. In some cases this was due to the unusually heavy rain. It was successful in Delhi, Hissár, Hoshiárpur, Siálkot and Dera Gházi Khan. Further trials will be made.

Date palm.

During the year a large supply of date palm seed in pulp was obtained from Muscat through the agency of Surgeon-Colonel A. S. G. Jayakar, and also 150 offsets. These were distributed with instructions for sowing to 16 districts. No further supplies were obtained from Egypt or Persia. A pamphlet, prepared by Mr. A. G. Reid, Executive Engineer, Irrigation Department, containing very useful information on the cultivation of the date palm, was distributed to all District Officers.

The seeds and offsets distributed in previous years have produced good results in most districts, but failures in recent experiments are reported from Pesháwar and Ludhiána.

Salt bush.

Three ounces of salt bush seed were received from Melbourne and experimented on in the Lahore Agri-Horticultural Gardens. The Superintendent reported as follows: "The seed received from Melbourne germinated well. We already have large established plants of the salt bush in the garden. The more saline the soil is the better the plant thrives. It can be propagated by cuttings and layers, as well as by seed. The Lahore collected seed does not germinate well."

Experiment in Kángra with Pesháwar rice.

An experiment was made in Kángra with rice imported from the Pesháwar district. Three varieties were tried. Of these Bára Shekhán, 1st quality, and Mushterzai, both gave good results, but the outturn of Bára Shekhán, 2nd quality, was low owing to unusually heavy rain.

Oats and sorghum.

Some oats were received from the Cape during the year, and some Impey, a *sorghum* much grown in Africa, from Captain Birdwood, Karnál. These will be tried in the present year.

Abyssinian thaeff.

An experiment was made in the Chenáb Colony with a small quantity of Abyssinian thaeff seed, but it proved a failure; the Colonization Officer reports that he tried it with a view to ascertain if it was sufficiently hardy to grow wild as the grasses do in the Bár. He found that it would not do so and was not worth cultivating with the aid of canal water as a fodder crop.

Mauritus grass.

At the request of the Superintendent of Police, Hoshiárpur, some seed of Mauritus grass was obtained from Coorg for experiment. The grass was tried in a light sandy loam and appears to have been a success. It yielded two crops and was relished by horses to whom it was given. It required watering.

Indigo.

The Deputy Commissioner of Dera Ismail Khan reports that he has been making experiments with indigo with a view to extend the cultivation of that crop with considerable success. He has arranged to get a man versed in the preparation of the dye from a neighbouring district and hopes to establish the industry in his own, where it is at present unknown.

Supply of fruit trees from the Government Agri-Horticultural Gardens and Mahásu Orchards, Simla.

16. No fruit trees were this year supplied from the Lahore Agri-Horticultural Gardens to districts, except 183 budded apple trees to Kángra. Apples are not suited to Lahore, and will not be grown in the garden in future.

During the year 2900 grafted fruit trees were placed at my disposal from the Mahásu Orchards. This is an improvement on last year when the number was 2,100, but is still too few. However more may be expected in future, until the number which has been fixed as reasonable, *i.e.*, 5,000 is finally reached.

These trees were distributed to Ráwalpindi, Hazára, Kángra, Simla and Gurdáspur. Those distributed in former years have done well, and a very fine sample of apples grown in the Ráwalpindi district from trees supplied from Mahásu was sent to me during the summer.

The services of the orchard pupil, whose education under the Superintendent was paid for, from the grant at the Director of Land Records' disposal, were placed at the disposal of the Deputy Commissioner, Simla, to plant out and graft trees, and to instrúct the recipients of fruit trees in these and kindred operations in the hill States round Simla. Mr. Steedman reports that he has done some very useful work. He is still under Mr. Steedman's orders.

Altogether it may be said that good and useful work has been done in the direction of the spread of fruit culture, and encouraging results obtained.

Bone dust.

17. No further experiments were made with bone dust during the year.

Agricultural implements.

18. We have no experimental farms in the Punjab, and consequently the opportunities for experiment with agricultural implements are restricted.

Watt's plough and harrow.

A Watt's plough and zigzag harrow were supplied to Sardár Amar Singh, Ludhiána, for experiment at his own request. The plough worked well, but the Sardár did not mention the results obtained with the harrow.

American Rocker pump.

Three American Rocker pumps were made in the Railway Workshop for the Director of Land Records. One was supplied to the Agri-Horticultural Gardens where it works well and is much appreciated. One was sent to Mr. Nicholl, Secretary, Amritsar Municipality, and was very well reported on by him after trial at the Amritsar Cattle Fair in presence of large number of cultivators and landowners. The third was purchased by Mr. Francis who reports that the pump worked well while used, but is rather harder labour than the ordinary cultivator likes.

Sugar evaporating pan.

No further experiments are reported with the shallow sugar evaporating pan.

Sand-pump and cream separator.

The sand pump and boring apparatus which had never produced very good results was sold during the year. No further experiments are reported with the cream separator.

Chinese water wheel.

A model of a Chinese water-wheel was sent to me by the Government of India, with a view to experiments being made in some of the streams or canals of the Punjab.

As a matter of fact, wheels of precisely the same principles, known generally as Japanese wheels, are at work on several of the canals in the Punjab. There are two or three in the neighbourhood of Lahore. These however are on a very much smaller scale, 8 or 10 feet in diameter, whereas the Chinese wheel was stated to be 40 or 45 feet in diameter. This was found to be too large for the water-power and depth available, and the model has been returned with a report to that effect.

Water-lifts.

No further results have been obtained with Sullivan's or Taylor's water-lifts.

Threshers.

I have arranged with Messrs. Thomson and Mylne for further experiments to be made during the present year at Amritsar, with their new threshing machine. No experiments were made with the steam thresher during the year under report.

Supply of seeds, &c., to other provinces and collections for Imperial Institute.

19. Four lbs. of Frash (*Tamarix articulata*) seed were supplied at his request to Director of Land Records and Agriculture, N.-W. P. and Oudh.

Specimens of the various forms of churns in use in the Punjab, with information concerning them were supplied at the request of the Reporter on Economic Products for Herr. B. Matiny of Berlin.

Collection of specimen in various forms of safflower (*Carthamus*), Indian madder (*Rubia cordifolia*) and opium (*Papaver Somniferum*) are being made for the Imperial Institute through this Department.

A collection of dyed and printed silk, cotton and woollen goods with dying and printing materials, which was entrusted to this Department has been kindly undertaken by Mr. Andrews, Curator, Lahore, Central Museum, but is not yet complete.

Plagues of locusts and field rats.

20. No plague of locusts occurred during the year. Much damage was however done by field rats (voles) in the districts of Ferozepore and Lahore. There appears to be no remedy for this plague. Arsenic was tried in Ferozepore, but did not prove a success. A copy of the report of the Departmental Committee appointed by the Board of Agriculture to enquire into and report on the plague of field voles which occurred in Scotland was carefully studied and circulated to the infected districts. No remedies appear to have been of much avail in that case either.

Analysis of soils.

21. I have already alluded in para. 15 to the experiments going on in the garden on the reclamation of saline soil.

The experiments on the analysis of soils and the production of *kankar* are proceeding. The Agricultural Chemist desires to compare the quantity of *kankar* and salts in the soil before and after the experiment, and the second samples will not be taken out until the end of 1895. There is therefore as yet nothing further to report.

Analysis of stone of the Bára river.

A specimen of stone from the bed of the Bára river, forwarded by the Deputy Commissioner of Pesháwar, was submitted for analysis, in the hope that it might prove to contain precious metals, but this did not prove to be the case.

Insect pest.

22. Specimens of a borer insect which did much harm to the *sorghum* were sent by the Deputy Commissioner, Gurgáon, to Dr. Coates. District Officers have been supplied with copies of the Indian Museum notes and conspectus of insect pests, and requested to assist Dr. Coates in the collection of further information.

Bruceabad Farm.

23. A separate report on the Bruceabad Farm is submitted as usual. There was a very great falling off in income from the previous year. This year the income was only Rs. 6,400 against Rs. 16,700 in 1892-93. The decrease in income is largely due to the fall in prices, wheat sold at Rs. 1-15-0 per maund instead of Rs. 3. There was also a considerable falling off in outturn owing to an unfavorable season, the failure of hill torrents and the low supply of water in the Dhundi Canal. Prospects this year are at present said to be excellent.

24. Statements regarding the public gardens in the Delhi and Lahore districts are given in Appendix B. The receipts generally cover the expenditure. The only noticeable increase in expenditure is in the Shálamár garden, which is due to the construction of an iron tank at a cost of Rs. 2,000. During the year 2,500 new plants were planted in the Delhi gardens, chiefly flower, lemon and citron trees, plantains, &c., and 250 fruit trees in the Shahdara garden. They are chiefly ornamental and pleasure gardens.

Public gardens in Lahore and Delhi Districts.

25. The Secretary to the Government, Punjab, Public Works Department, and the Curator, Lahore Museum, report that no articles of archæological interest have been discovered during the year in the Punjab.

Archæology.

26. The Deputy Commissioner of Gurdáspur has instituted a poultry show at Shakargarh. The rearing of improved poultry is a matter to which more attention might well be given in many districts in the Province, and attention will be called to this matter.

Poultry show.

27. A separate Provincial Veterinary Report is now submitted annually through this Department. All matters connected with horse and cattle breeding, cattle disease, horse and cattle fairs and kindred matters are now dealt with in that report, and under orders of Government are excluded from the departmental report. The conspectus of cattle diseases which was alluded to in Government of India No. $\frac{27}{133}$, dated 4th July 1893, has not made much progress during the year and will be noticed in the Veterinary Report.

Civil Veterinary Department.

Special reports on the furtherance of horse breeding and mule breeding were submitted during the year.

A special report is also annually submitted through this Department on the Lahore Veterinary College.

28. The comparison of monthly receipts of mutation fees and patwári fees accounts with the statement of treasury credits furnished by the Accountant-General has been regularly made. They generally agree, but differences have been several times detected and promptly enquired into.

Comparison of monthly receipts with treasury accounts.

29. The agricultural grant for the year was Rs. 2,000, the expenditure was as follows :—

Budget and expenditure

	Rs.
Experiments	806
Rain-gauges	52
Miscellaneous	136
Economic products	500
Subscription, &c.	22
Total ...	1,516

30. Lála Paira Rám, Extra Assistant Commissioner, has held charge of the office of Personal Assistant throughout the year, and continues to do good work and to render me great assistance.

Personal Assistant to Director.

I also desire to notice the excellent work of the Superintendent of my office, Mr. Pestonji.

Superintendent.

I have the honor to be,

Sir,

Your most obedient servant,

FRED. A. ROBERTSON,

Director of Land Records and Agriculture, Punjab.

APPENDIX A.

Report on the working of the Bruceabad Farm for 1893-94.

Establishment.

During the year under report the only change in establishment has been an increase of one karawa and the raising of the pay of karawas from Rs. 3 per mensem to Rs. 4, and in the case of two old servants to Rs. 5. The total monthly expenditure on establishment is now—

			Rs.	a.	p.
1	Superintendent,	on Rs. 40	40	0	0
1	Moharir,	on Rs. 20	20	0	0
2	Karawas,	on Rs. 5 each	10	0	0
4	,,	on Rs. 4 each	16	0	0
		Total pay	86	0	0
	Average miscellaneous monthly expenditure		3	3	4
		Total monthly expenditure	89	3	4

Income for the year.

There was a great falling off in the income for the year under report as compared with last year, being only Rs. 6,428-2-6 as against Rs. 16,717-4-3. This decrease is largely due to the heavy fall in prices. Wheat, the crop chiefly grown, having declined from Rs. 3 per maund to Rs. 1-15. There was however a large decrease in outturn which is attributable to unfavorable season. At the time when the wheat was coming into ear a south wind blew which, according to the zamíndárs, prevented the ears filling properly and reduced the size of the grains. For the same reason the gram pods were nearly all empty. The river floods were unfavorable, and the kharíf income was therefore reduced. Failure of hill torrents and low supply of water in the Dhundi Canal also helped to reduce the income.

Tenants.

The condition of the tenants is good, the rates of *batai* are rather more favorable than those obtaining in neighbouring villages, hence there is no difficulty in obtaining tenants of a good stamp. No bad characters are allowed to be tenants, hence there is no crime on the estate.

General.

The year under report has been a very bad one as far as income is concerned. The prospects are however excellent, the river flooding has been most favorable and the kharíf area is very large. Should the season continue favorable and prices rise somewhat, the income for 1894-95 should equal, if not exceed, that for 1892-93.

R. M. LOWIS,
Assistant Commissioner.

A.—Statement showing gross income of the Bruceabad Farm for the last three years.

Serial No.	Name of village.	Name of crop.	1891-92. Income in kind.	1891-92. Cash.	1891-92. Total.	1892-93. Income in kind.	1892-93. Cash.	1892-93. Total.	1893-94. Income in kind.	1893-94. Cash.	1893-94. Total.
			Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
1	Bruceabad...	Kharíf	181 5 2	0 4 0	181 9 2	684 3 9	296 15 6	981 3 3	714 0 4	365 10 0	1,079 10 4
		Rabi	2,325 9 5	97 13 11	2,423 7 4	10,540 10 7	359 12 8	10,900 7 3	4,343 3 10	408 14 3	4,752 2 1
2	Pahárpur	Kharíf	...	3 8 0	3 8 0	5 12 6	...	5 12 6	9 3 9	...	9 3 9
		Rabi	604 5 7	21 8 0	625 13 7	1,463 11 6	6 8 0	1,470 3 6	452 1 0	25 6 0	477 7 0
3	Jágír Janúbi and Shumáli	Kharíf	79 0 9	...	79 0 9	286 13 5	2 3 0	289 0 5	20 7 9	...	20 7 9
		Rabi	143 11 6	2 0 0	145 11 6	...	...	...	...	...	...
4	Patti Sarkári	Kharíf	0 4 3	...	0 4 3	104 13 0	1 0 0	105 13 0	0 8 1	...	0 8 1
		Rabi	92 7 10	...	92 7 10	3 8 6	...	3 8 6	...	...	...
5	Rakh Sohara	Kharíf	...	...	...	378 5 9	...	378 5 9	...	...	...
		Rabi	494 14 2	...	494 14 2	1,285 4 11	3 6 0	1,288 10 11	...	...	...
6	Rakh Ghauspur	Kharíf	...	...	...	95 15 6	...	95 15 6	84 3 6	...	84 3 6
		Rabi	199 14 9	...	199 14 9	1,198 2 8	...	1,198 2 8	4 8 0	...	4 8 0
	GRAND TOTAL	...	4,121 9 5	125 1 11	4,246 11 4	16,047 6 1	669 13 2	16,717 3 3	5,628 4 3	799 14 3	6,428 2 6

ASSISTANT COMMISSIONER'S OFFICE,
RAJANPUR:
Dated 27th October 1894.

R. M. LOWIS,
Assistant Commissioner.

B.—Statement showing the area of villages connected with the Bruceabad Farm in the Rájanpur Tahsíl for the last three years.

Serial No.	Name of village.	Settlement area.						1891-92.						1892-93.						1893-94.					
		Area.	Ghair mumkin.	Jadíd.	Qadím.	Uncultivated.	Cultivated.	Area.	Ghair mumkin.	Jadíd.	Qadím.	Uncultivated.	Cultivated.	Area.	Ghair mumkin.	Jadíd.	Qadím.	Uncultivated.	Cultivated.	Area.	Ghair mumkin.	Jadíd.	Qadím.	Uncultivated.	Cultivated.
1	Bruceabad	37,401	7,409	2,277	23,834	...	3,881	37,398	5,084	65	8,996	5,949	17,304	37,398	4,037	65	1,120	311	31,865	37,398	2,248	...	7,705	3,739	23,616
2	Pahárpur	37,565	892	503	29,511	...	6,659	21,637	219	...	19,237	792	1,389	21,408	258	349	17,696	742	2,363	21,972	199	226	17,758	1,358	2,431
3	Rakh Tukra, Jágír Janúbi.	8,548	405	...	7,675	...	468	8,548	427	...	6,311	1,367	443	8,552	406	1,045	6,032	319	750	8,552	406	1,045	5,978	821	302
4	Rakh Tukra, Jágír Shumáli.	1,754	108	4	1,233	...	409	1,754	109	16	449	855	325	1,754	108	216	585	224	621	1,754	108	216	579	684	167
5	Patti Sarkári ...	107,560	3,239	1,584	102,236	...	501	107,555	3,239	2,866	100,745	39	666	107,560	3,239	267	103,576	76	402	111,244	1,320	303	108,653	...	968
6	Rakh Sohara ...	26,138	136	...	26,002	...	...	26,138	136	575	12,608	8,776	4,043	26,138	136	3,284	17,555	2,648	2,515	26,138	136	3,284	17,555	5,163	...
7	Rakh Ghauspur ...	35,413	234	...	35,179	...	...	35,414	234	...	27,630	6,083	1,467	35,414	234	...	25,164	2,828	7,688	35,414	234	...	25,164	8,895	1,121
	Total ...	...	...	...	...	...	11,918	...	...	...	...	...	25,637	...	...	...	...	...	46,204	...	...	...	...	...	28,605

Assistant Commissioner's Office,
Rajanpur:
Dated 27th October 1894.

R. M. LOWIS,
Assistant Commissioner.

Statement showing demand, realization and balances of the Bruceabad

Serial No.	Name of villages.	Name of crop.	1891-92. Balance of previous harvests.	Demand for current harvests.	Total.	*A.*—Credited into treasury.	*B.*—Spent direct.	*C.*—Total of *A.* and *B.*	Balance recoverable.	Balance of previous harvests.
			Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Bruceabad, Pahárpur, Jágír Janúbi and Shumáli, and Patti Sarkári.	Kharíf ...	12,546 4 0	264 6 2	12,310 10 2	9,988 9 5	350 0 0	10,338 5 6	2,772 0 9	2,506 10 9
		Rabi ...	2,472 0 9	3,887 8 3	5,759 9 0	2,580 10 3	672 4 0	3,252 14 3	2,506 10 9	1,714 11 8
2	Grazing fee	.....	...	312 0 0	312 0 0	312 0 0	...	312 0 0	...	...
3	Sale of wood and fisheries	.....	...	33 15 0	33 15 0	33 15 0	...	33 15 0	...	...
4	Refund of takávi advance	.....	7 0 0	555 6 0	562 6 0	7 0 0	...	7 0 0	555 6 0	555 6 0
5	Other items (amount received from Sadr.)	.....	...	...	...	...	...	...	...	...
6	Rakh Sohára and Ghauspur ...	Kharíf ...	1,857 3 6	...	1,857 3 6	760 1 5	...	760 1 5	1,097 2 1	867 2 1
		Rabi ...	1,097 2 1	604 12 11	1,791 15 0	814 12 11	110 0 0	924 12 11	867 2 1	974 5 3
	Total balance recoverable ...	... ..	...	...	...	...	...	...	...	...

ASSISTANT COMMISSIONER'S OFFICE,
RAJANPUR;
Dated 27th October 1894.

farm for three agricultural years ending 30th September 1894.

1892-93.						1893-94.						
Demand for current harvests.	Total.	*A.*—Credited into treasury.	*B.*—Spent direct.	*C.*—Total of *A.* and *B.*	Balance recoverable.	Balance of previous harvests.	Demand for current harvests.	Total.	*A.*—Credited into treasury.	*B.*—Spent direct.	*C.*—Total of *A.* and *B.*	Balance recoverable.
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1,381 13 2	3,888 7 11	2,213 12 3	...	2,213 12 3	1,714 11 8	11,455 3 3	1,109 13 11	12,565 1 2	4,628 12 8	1,401 15 2	6,230 11 10	6,334 5 4
12,374 3 3	14,088 14 11	2,598 0 2	271 11 6	2,869 11 8	11,455 3 3	6,334 5 4	5,229 9 1	11,563 14 5	6,152 14 6	853 4 10	7,006 3 4	4,557 11 1
Include in the Bruceabad total demand.												
Ditto	ditto	ditto.										
...	555 6 0	555 6 0	...	555 6 0	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...
474 5 3	1,341 7 4	347 2 1	20 0 0	367 2 1	974 5 3	2,403 7 7	84 3 6	2,487 11 1	2,382 12 3	...	2,382 12 3	104 14 10
*2,486 13 7	3,461 2 10	952 11 4	105 0 0	1,057 11 4	2,403 7 7	104 14 10	4 8 0	109 6 10	88 11 0	...	88 11 0	*20 11 10
...	...	...	...	...	...	...	...	...	...	...	...	4,557 11 1

* Strike out Rs. 20-11-0 as the demand for the last year was really Rs. 2,466+20-11-10 were by an oversight shown in excess, hence there will be no outstanding at the end of 1893-94.

R. M. LOWIS,

Assistant Commissioner.

APPENDIX B—(*i*).

Statement showing Receipts and Expenditure of Shálamár and Shahdara Gardens during 1893-94.

1	2	3	4	5	6	7	8
Name of gardens.	Area.	Receipts.	Amount.	Expenditure.	Amount.	Existing fruit trees.	New trees planted.
	A. R. P.		Rs. A. P.		Rs. A. P.		
Shálamár	39 2 10	Actual opening balance on 1st April 1893.	1,175 2 9	Pay of fixed establishment ...	1,486 2 0	2,908 mangoes, 655 pomegranates, 17 peaches, 230 pears, 15 oranges, 618 lemons, 302 amrúds, 64 mulberries, 83 dates, 77 loquats, 2 apples, 18 figs, 15 grapes.	
		(*a*) Income from garden	1,250 0 0	Water-rate	273 14 0		
		Land revenue of Bágbanpur ...	1,305 8 0	Price of gumlas	60 0 0		
		Fees from Shálamár Dák Bangalow	5 8 0	Expenditure in connection with Charágán Fair.	200 0 0		
		Rent of wooden shops at Shálamár Gardens.	12 0 0	Construction of an iron tank at Shálamár Gardens.	2,000 0 0		
		Fees from Charágán Fair... ...	14 0 0	Total Expenditure ...	4,020 0 0		
		Total Receipts ...	2,587 0 0	Deficit ...	−257 13 3		
		Grand Total ...	3,762 2 9		3,762 2 9		
Shahdara	48 1 28	Actual opening balance on 1st April 1893.	847 15 7	Pay of fixed establishment ...	564 0 0	279 mangoes, 117 jaman, 114 lemon and peaches, 170 dates, 491 oranges, 1,420 pomegranates, 375 plantain, 100 bedmushk, Malta, 216 oranges, 18 mulberrys, 9 amrud and 7 pears.	Nursery containing pears, grapes, loquat, and apples
		Income from Shahdara Gardens...	783 0 0	Pay of temporary establishment...	117 7 0		
		Sale of trees	150 0 0	Price of bhoosa, gram, &c. ...	42 8 6		Bedmushk ... 100
		Total Receipts ...	933 0 0	Price of tinds	17 8 0		Plantain ... 150
		Grand Total ...	1,780 15 7	Construction of doors and khurlis for bullocks.	72 0 0		Total ... 250
				Other items...	83 15 6		
				Total Expenditure ...	897 7 0		
				Actual closing balance on 31st March 1894.	883 8 7		

(*a*). Second instalment for 1893-94 in arrears, hence the decrease in receipts.

DAV. JOHNSTON,
For *Deputy Commissioner.*

APPENDIX B—(*ii.*)

Statement showing particulars regarding Kúdsia and Roshnara Gardens for the year ending 31st March 1894.

Name of Garden.	Area.	System of management.	Average annual receipt during the year ending 31st March 1894.	Average annual expenditure during the year ending 31st March 1894.	Sources from which the funds are derived.	Purposes served by the institution.	New plants introduced.		Fruit growing.	Remarks.
							Name.	Number.		
Kúdsia	67 acres	Direct management.	Rs. 1,127	Rs. 325	Municipal Fund.	Pleasure Garden...	Rose shrubs, lemon and citron trees and plantains and various flower trees.	About 1,500.	...	
Roshnara	158 acres		Rs. 1,933	Rs. 2,451		Ditto ...	Plaintains, rose shrubs and other flower trees.	About 1,000.	...	

Delhi Municipal Office,
Dated 21st December 1894.

H. FINLEY,
Secretary, Municipal Committee.

APPENDIX B—(*ii*).

Statement showing particulars regarding Kúdsia and Roshnára Gardens, for the year ending 31st March 1895.

Name of Garden.	Area.	System of management.	Average annual receipts during the year ending 31st March 1895.	Average annual expenditure during the year ending 31st March 1895.	Sources from which the funds are derived.	Purposes served by the institution.	New plants introduced.		Fruit growing.	Remarks.
							Name.	Number.		
			Rs.	Rs.						
Kúdsia	67 acres	Direct management.	1,379	2,891	Municipal funds.	Pleasure Garden ...	Rose shrubs and limes ...	About 500 ...	...	
Roshnára	158 „		2,173	2,624		Ditto ...	Rose shrubs, guavas and plantains.	About 400 ...	...	

Delhi Municipal Office:
Dated 14th January 1896.

S. BAHADUR,
For Secretary, Municipal Committee.

ANNUAL REPORT

OF THE

DEPARTMENT

OF

LAND RECORDS AND AGRICULTURE,

PUNJAB,

For the year ending 30th September 1895.

Published by Authority.

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

Lahore:
THE "CIVIL AND MILITARY GAZETTE" PRESS,
Contractors to the Punjab Government.

1896.

No. 59.

FROM

R. G. THOMSON, ESQUIRE,
Revenue Secretary to Government,
Punjab and its Dependencies,

To

THE SECRETARY TO THE GOVERNMENT OF INDIA, REVENUE AND AGRICULTURAL DEPARTMENT.

Dated Lahore, 24th March 1896.

File No. 10.

Revenue and Agriculture.

Agriculture.

SIR,

I AM directed to submit, for the information of the Government of India, three copies of the Progress Report of the Department of Land Records and Agriculture in the Punjab for the year 1894-95, together with copies of the letter No. 156, dated the 27th February 1896, from the Senior Secretary to the Financial Commissioners, and to say that the Lieutenant-Governor concurs in the remarks of the Financial Commissioner as to the efficiency with which Mr. Robertson has discharged the duties of his office.

I have the honor to be,
SIR,
Your most obedient Servant,
R. G. THOMSON,
Revenue Secretary to Government, Punjab.

Punjab Government Press, Lahore—18-4-96—230.

No. 60.

FROM

R. G. THOMSON, ESQUIRE,

Revenue Secretary to Government,

Punjab and its Dependencies,

TO

THE SENIOR SECRETARY TO THE FINANCIAL COMMISSIONER, PUNJAB.

Dated Lahore, 24th March 1896.

File No.

Revenue and Agriculture.

Agriculture.

SIR,

WITH reference to your letter No. 156, dated the 27th February 1896, submitting the Progress Report of the Department of Land Records and Agriculture in this Province for the year 1894-95, I am directed to forward a copy of my letter No. 59 of to-day's date, to the Government India, for information and communication to Mr. Robertson.

2. It is observed that there is no mention in the Report of the continuance of the further experiments in planting and grass sowing begun by Mr. Gladstone in the Umballa District, and it is therefore presumed that there is nothing calling for notice. I am to request, however, that in future when there is nothing to notice on any particular point on which a report is required under standing orders, the fact may be stated.

I have, &c.,

R. G. THOMSON,

Revenue Secretary to Government, Punjab.

Punjab Government Press, Lahore—25-3-96—391.

No. 156, dated Lahore, 27th February 1896.

From—M. W. FENTON, Esquire, Senior Secretary to Financial Commissioner, Punjab,

To—The Revenue Secretary to Government, Punjab.

I AM directed to forward a letter from the Director of Land Records and Agriculture, Punjab, No. 319, dated 17th February 1896, submitting the annual progress report of the department under his charge for the year 1894-95, and to convey the following remarks of the Financial Commissioner.

C. M. RIVAZ, Esquire, C.S.I.

2. The Director's inspection notes are submitted to the Financial Commissioner for his perusal, so he is able to testify to the thoroughly efficient manner in which Mr. Robertson has performed his important duties during the year under report. There can be no doubt that the revenue record work is steadily improving throughout the Province from year to year, and this satisfactory progress is in large measure due to the careful supervision exercised by the experienced officers who have successively held the post of Director since the establishment of the Land Records Department. The Patwári and Kánúngo establishments have materially improved in efficiency, and, as a rule, Tahsíldárs and Náib Tahsíldárs display zeal and intelligence in the performance of this important branch of their duties.

3. The Financial Commissioner agrees with Mr. Robertson that at present the supply of properly qualified Revenue Assistants is not equal to the demand, and that consequently this valuable link in the revenue chain is weak in some districts. The Financial Commissioners are, however, doing their best to remedy this state of things. A list is kept up in the Government Office of Extra Assistant Commissioners who are qualified to perform the duties of Revenue Assistant, and in the periodical revisions of this list the Financial Commissioners are careful to eliminate the names of such officers as on trial have proved themselves unequal to the satisfactory performance of revenue inspection work, and to recommend for inclusion in the list only such officers as have had a thoroughly good revenue training. Also, in accepting candidates for their Extra Assistant Commissioner register, the Financial Commissioners pay special attention to revenue qualifications. It may be confidently hoped, therefore, that before long the supply of really competent Revenue Assistants will be sufficient for the requirements of the Province.

4. The practice of making Sub-Divisional Officers Revenue Assistants for the portions of districts which are placed under their charge is in accordance with orders contained in the Revenue Circulars, and the Financial Commissioner thinks the rule is a good one and should be maintained. With reference to the Director's criticisms on this subject, it must be borne in mind that (1) outposts are for the most part established in districts of unusually large area or where the work is exceptionally heavy, and consequently the Revenue Assistant at head-quarters would be unable to properly supervise the revenue work of the whole district, and (2) Sub-Divisional Officers are not always young Assistant Commissioners, but in many cases experienced Extra Assistants. And even when a young Assistant is placed in charge of an outpost, his responsibility for the revenue work of his sub-division is the best possible practical training for him as a future District Officer. Most Assistant Commissioners are now given a few months' settlement training before being appointed to an outpost, and so ought to be quite competent for the proper performance of the duties which devolve on a Revenue Assistant.

5. The Financial Commissioner quite agrees with the Director that transfers of Patwáris from one circle to another should be avoided as far as possible. Such transfers are usually made as a punishment for misconduct or inefficiency, but the infliction of a corrupt or useless Patwári upon another set of villages is obviously not a desirable measure in such cases.

6. Among subsidiary matters which are referred to by the Director, it may be noticed that the question of *patwár khánas* has after considerable discussion been put on a satisfactory footing, that good progress has been made in separating the revenue records in District Offices and placing them in charge of the District Kánúngo, and that orders are being issued after consulting the Government Advocate, which will, it is hoped, materially assist Revenue Officers in applying the provisions of Section 37 of the Land Revenue Act in regard to the revision of entries in records of rights and annual records.

Punjab Government Press, Lahore—12-3-96—491.

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No. 319.

FROM

FRED. A. ROBERTSON, ESQUIRE, C.S.,

Director of Land Records and Agriculture, Punjab,

To

M. W. FENTON, ESQUIRE,

Senior Secretary to Financial Commissioner, Punjab.

Dated LAHORE, 17*th February* 1896.

SIR,

Introductory.

I have the honor to submit the Annual Progress Report of the Department of Land Records and Agriculture, Punjab, for the year 1894-95. I have held charge of the office of Director of the Department throughout the year.

Director's tour.

2. I visited the head-quarters of 19 districts and 44 tahsíls and the circles of 70 field kánúngos. I travelled 6,921 miles by rail and 1,443 miles by road, and spent 195 days on tour.

I did actual marching under canvas in 4 districts only—Amritsar, Rohtak, Gurdáspur and Kángra. During the rest of my inspections I made use of rest-bungalows, the railway, *tongás* and other means of conveyance.

Inspections.

3. My inspections were much of the same character as in previous years, but various matters received special attention. The work of patwáris in the field was inspected from time to time with a view to see how far the average patwári in each district is working on a proper system. Of course it is no part of the work of my inspections to discover whether any particular patwári is an efficient one or not. But it is only by occasionally sifting the work of a patwári thoroughly that it is possible to discover whether the field kánúngos are active and efficient in their inspection work, and whether the system followed is a correct one. A field kánúngo has in fact little or no original work, and it is necessary sometimes to examine the work which he has inspected to find out his own capabilities or deficiencies. An immense deal depends on the efficiency of the field kánúngos; and I have throughout the year devoted particular attention to them, carefully scrutinizing their arrangement of their tours, their diaries, and the results of their inspections and correction of annual records. In the inspection of tahsíl offices such work as comes from the hands of the field kánúngos is always examined with special care. The results will be noted further on. The inspection of office kánúngos' offices and at head-quarters of districts was carried on much as usual.

Kánúngos' examinations.

4. Examinations of kánúngos and candidates for the post of kánúngo were held at the head-quarters of nine districts during the year. Eighty-seven candidates presented themselves for examination, of whom 55 passed the test. More care has been exercised by district officers than formerly in the selection of candidates for this post; and among those recently brought on to the list of accepted candidates there were not many obviously unsuitable. Some of the older candidates certainly did come under that category; but as these come up for examination, and fail hopelessly, their names are struck out, and, as a rule, the new entries are of a better type. In some cases, however, more care might still be exercised. The men who have passed the Entrance Examination still naturally prove themselves the best candidates at exmination work: but I never grant a certificate of efficiency on the literary examination alone, and always insist on a certificate that practical work has been done in the field. The number of candidates on the list is usually far in excess of the

requirements, and it would be well if District Officers were in future to restrict the number and enter only the names of thoroughly suitable men. There is now a wide field of selection; and men who have passed the Entrance Examination even are now accepting the office of patwári in considerable numbers, so as to obtain a double qualification, *i. e.*, both as patwáris under Rule 104, paragraph 2, and as Entrance passed men under paragraph 3. Part of the examination is always conducted *vivâ voce*. This not only affords an excellent test of the examinee's knowledge and capabilities, but, in the case of the patwári candidates, affords a very good opportunity of judging how work is actually carried on in the district.

Unpassed kánúngos.

The number of unpassed kánúngos is now only four. The rules allow the appointment of an unpassed candidate pending examination, and these four are of this class.

Patwári establishment.

5. The patwári establishment did not undergo extensive revision in any district. The rate of patwári cess was revised in Siálkot, and in that district the entire kánúngo establishment is now paid from patwári funds: no change has been made in the system of accounts. Patwári funds continue to contribute Rs. 70,810 to the cost of the kánúngo establishment of the Province. The patwári funds of all districts, with one exception, are in a thoroughly solvent condition. The exception is a district now under settlement, in which the matter will be speedily put right.

The question of the construction of *patwárkhánás* has been considered during the year, and it has been finally decided that *patwárkhánás* are to be provided from patwári funds only in cases where it is clearly impossible for the patwári to obtain a building otherwise for his house and office within his circle. In all other cases it is part of the condition of his service that the patwári shall make his own arrangements and shall reside with his family within his circle. This condition can only be relaxed under very special circumstances by the Collector. No demands of any kind are to be made on lambardárs, or landowners, or on village *malba* for the construction and repair of *patwárkhánás*. Where *patwárkhánás* exist patwáris must live in them and keep them in repair. A strong box for his records is allowed to every patwári from patwári funds. A Circular letter embodying these orders of the Financial Commissioners was issued by me on 27th June 1895. There are still a number of patwáris who do not live in these circles, but their number is diminishing. The rule is a very necessary one, and its observance should be insisted on.

Transfers of patwáris from one circle to another are still too common, and should be avoided as far as may be.

Record office.

6. The separation of record-of-rights and village records from the other files in the district office has been carried out in Hissár, Rohtak, Umballa, Simla, Kángra, Ferozepore, Jhang, Lahore, Amritsar, Gurdáspur, Siálkot, Gujrát, Gujránwála, Sháhpur, Jhelum, Pesháwar, Bannu, Dera Gházi Khan and Muzaffargarh. In Kohát the room provided is not nearly large enough for the purpose, and only the settlement records have been placed in it. This shows very good progress in this work. In twelve districts it has not yet been carried out. This separation of records has had excellent results, but it has thrown considerable extra work on the assistant district kánungo, and in some districts it may be found necessary to give him some help.

General results of Director's inspection.

7. The following points attracted my attention, *inter alia*, during my inspections:—

District record-rooms.

District record-rooms are generally kept in good order, but in many places more space is most urgently required. This was particularly the case in Dera Ismail Khan (inspected during the current year), and also in Delhi, Umballa, and Ráwalpindi. The settlement records are still frequently kept in the ordinary village bundles. I think this a bad plan, and that they should always be kept together in one place, separately from other files.

I find that there is still a tendency to avoid correcting mistakes in the statistics in the vernacular village note-books, which have been discovered after the entries have been copied into the English statistical registers and the statements forwarded for the Revenue Report. Office kánúngos are afraid to make these corrections, as their books will not then correspond with the annual statements. Inasmuch as these note-books are specially kept up with a view to assist in reassessments, mistakes discovered should certainly be corrected in them, even when it is too late to correct the annual statements already despatched to my office.

Standing and annual records.

A number of the standing or annual records, as the case may be, are examined carefully at each tahsíl visited. The work of inspection done on these by field kánúngos and other superior officers was specially looked into. Under Rule 126 field kánúngos are directed specially to check annual records during the month of September, and to record all mistakes found, and, as far as possible, to correct them. These lists of corrections were specially examined and checked, and enquiry made as to whether the mistakes noted had been duly set right. It was found in some districts that, owing to the early date fixed for the commencement of the autumn crop inspections, sufficient time was not left to the field kánúngos to discharge this part of their duty properly. In these cases the attention of the Deputy Commissioner and Commissioner has been called to the matter. This was notably the case in Kángra, in which district; owing to extremes of altitude and climate, no one suitable date for crop inspections can be fixed for the whole district. In some of these cases the work of checking abstract statements is scamped owing to want of sufficient time.

The work of preparing these records is well done as a rule. It is forbidden to have them bound in boards, but directions have been issued to sew them into limp covers for their protection and preservation. This work is generally very badly done. It should now be done in the tahsíl by proper agency; and I have impressed this on the local officers during my tours. In no part of the record work is such extraordinary improvement to be seen as in the annual records, the correct preparation of which is of great importance. A few years ago all that was prepared was a *saliána*, or yearly statement,—an ephemeral document, destroyed after six years,—which was in fact merely a rent-roll and in no sense a record-of-rights. Now an "annual record" is prepared every year: so far as possible all changes which occur are incorporated in the record after attestation in the mutation register, and every fourth year a detailed *jamabandi*, or annual record, is prepared, in which a complete detail of rights and right-holders is given. In many districts a portion at least of these detailed *jamabandís* are checked holding by holding, and I contemplate submitting a proposal to the Financial Commissioners that the detailed *jamabandi* shall be so checked in every village once in eight years by field kánúngos and Revenue Officers. If this be accepted, the record-of-rights annually prepared in each village will be actually attested by field kánúngos and Revenue Officers twice during the currency of settlement, and the work of revision of records at reassessment will be rendered very simple. Already the task of the Settlement Collector in this direction has been made infinitely easier than it was, and I think that the Department of Land Records can look with some satisfaction at the result of its labours in this particular. Entries in these annual records have now the presumption of correctness attached to them, and their value and importance to the Courts in cases connected with land cannot well be over-estimated. The "Settlement Record," which was in old days looked upon with the same sort of veneration as the Family Bible, is already a thing of the past, and the "Standing Record" now prepared at reassessment merely consists of the ordinary "detailed *jamabandi*," prepared with special care, and attested holding by holding, together with certain other papers which it was considered could not be prepared under the Land Revenue Act unless the compilation of a standing record was also prescribed. It has also been proposed to give up the preparation of abbreviated *jamabandís* (annual records) every year, except in special cases, such as villages under fluctuating assessments, or subject to river action, and to concentrate our efforts on the detailed record prepared every fourth year. These proposals are now before the Financial Commissioners

Tahsil kánúngos' offices.

The tahsíl kánúngos' offices inspected were generally found in good order; sufficient space is generally provided, but in some cases the office kánúngo has to work in a room in which the records are also kept: this is, I think, open to grave objection. In several of the tahsíls which I visited it could be easily remedied, and I have in such cases suggested the alterations which I considered desirable to the District Officers concerned; and I trust they will be carried out.

The actual space required for records in tahsíls is now not great, and that provided is generally ample. Though these offices are not now cumbered by old and useless papers in the way they once were, I sometimes found bundles of such papers which should be got rid of.

Miscellaneous registers.

The miscellaneous registers are generally well kept. Particular attention was given to a comparison between the entries in the lambardárs' register and the *jamabandís*, with, I regret to say, unsatisfactory results in many instances. This was particularly the case in Simla, Montgomery, Jullundur, and Batála in the Gurdáspur district.

Orders have been issued during the year that land hypothecated for *takávi* advances need not be shown in the register of land hypothecated to Government. This has proved a relief to office kánúngos.

Sufficient attention has not been paid to the entry in the annual records of notes in the column of remarks, regarding land hypothecated to Government. This mistake has been corrected in some of the districts in which I previously detected it; and I noticed that in some cases this correction had led to the refusal of the transfer of the land in question, which would otherwise have been carried out. This is a matter of some importance and deserves attention.

Patwáris' circle register.

The remarks regarding the register of patwáris' circles made last year need not be repeated here.

Muáfi registers.

It is important that the *muáfi* registers should be kept up to date; and attention was paid to checking these with the assigned holdings in the annual records. Discrepancies are not uncommon. The lists attached to the annual records were generally correct, and the registers wrong in cases of difference.

Patwári fund accounts.

Patwári fund accounts are generally kept with fair accuracy. But the mistake is very commonly made of not bringing forward the balances of previous years. On each occasion of my visit to the head-quarters of a district I examined every item of miscellaneous expenditure from patwári funds, and am glad to say that I found very few irregularities. This careful restriction of expenditure has done much to increase the surplus in the patwári fund. The most notable case of irregular expenditure was an item of Rs. 267, paid in the Rohtak district without sanction, for land on which to build a *patwárkhána*. The circumstances of this case were, however, very peculiar. Patwáris pay is remitted to tahsíls by a letter of credit in order to avoid the accumulation of cash in the hands of the tahsíl officials. Cheques for the actual amounts required for the day's payments should be drawn against these. But I noticed a tendency in several cases to draw out a lump sum in the morning, some portion of which was disbursed, leaving a balance in the kánúngo's hands at night. This should be avoided.

Village and circle note-books.

The work of keeping up village note-books continues to improve. These books are very carefully examined by my Personal Assistant and myself, and a large number of totals and figures are checked and compared. Totalling work was generally found well done. A more satisfactory method of making up the totals of quadrennial statements has been introduced during the last few years, and this work was found much better than heretofore. Totalling work was defective in Gurdáspur and Batála. Each of these tahsíls has a very large number of villages. The division between agriculturists and non-agriculturists in Statement IX of the village note-books had been neglected in several cases, particularly in Delhi and Montgomery. The mistakes noted in last year's Report in Statement VI, Part III, were sometimes detected in this year's inspection also.

Counterparts of the village note-books in English are kept up in some districts. This is still in the experimental stage, and is being carefully watched.

In no branch of the work is more progress noticeable than in the remarks made by Tahsíldárs and Náib-Tahsíldárs in Statement X, of villages in which detailed jamabandis have been prepared. It is doubtful whether Náib-Tahsíldárs are intended to enter their remarks or not; and the question has been put before the Financial Commissioner. The remarks in many cases are still quite colourless, and consist of entries taken entirely from the statements. But the number of cases in which I came across really useful, intelligent remarks, which would be valuable to District Officers and Settlement Collectors, was much greater than in any previous year. This is, I think, very satisfactory.

Mutation work.

The entry of transfers in the mutation register, the attestation of these mutations by Revenue Officers, and their incorporation in the annual record, forms one of the most important parts of our record system. This work is in some districts an extremely heavy burden on the Revenue Staff, and, in order to make it possible to cope with the task, ten extra Náib-Tahsíldárs were again sanctioned for employment exclusively on mutation work. These have again proved most useful. Mutation work varies to an extraordinary degree from district to district. Thus, in 1894-95 no less than 50,804 were attested in Hoshiárpur, and only 4,683 in Jhang. The total number of mutations attested in 1893-94 was 628,683; in 1894-95 it rose to 726,672.

When a tahsíl is visited the mutation work is as carefully inspected as it is possible to inspect it, outside of the village in which the transfers occurred. I make a point of going through the whole file of rejected mutations, as I think that it is from these cases, which are usually disputed ones, in which careful judgment has to be exercised, that the character of the work can be best judged. It is only possible for me to look at the work done. The District Inspecting Officers must themselves see on the spot that mutation work is kept up to date and not left undone.

Revenue Officers experience most difficulty in dealing with certain classes of cases. They are often in doubt, where minors are concerned, in cases concerning *karewa*, or re-marriage of widows, and in questions of constructive possession. The extent to which entries in records may be varied by mutation orders when all the parties are not agreed is also a vexed question, differently dealt with in different districts. In some cases "possession" is held to be the main point for decision, and the entries are made to follow. In one case, however, the District Officer seems to consider that no change should ever be made in the entries in an annual record unless all the parties agree, save by the intervention of a court of law, even though the entries as they stand are simply due to the mistakes of our own officials (*ghalti bandobast*). The provisions of Land Revenue Act, Section 37 (*a*), regarding "facts proved to have occurred," receive different interpretations in different tahsíls. The matter has been put before the Financial Commissioner in connection with my inspection of Mooltan, and some general instructions will probably be called for. In many cases the absence of parties is a great difficulty; but the Revenue Officer who refused to record a mortgage because the mortgagor was not present, instead of taking measures to secure his presence, if necessary, seems to have made a mistake. If the record of transfers is to be always refused because the transferor, who has little interest in being present, is absent, much injustice may be done. In other cases I have found mortgages admitted by the mortgagor refused because the mortgagee was not yet in physical possession. Another class of cases in which many Revenue Officers are in doubt, is how to deal with the transfer by a mortgagee of his mortgage rights. These are constantly dealt with as sub-mortgages, and appear in our statistics as fresh mortgages of so much more land for so much more money, although an order has been issued, in the case of all sub-mortgages even, to show the land and the mortgage money both as a redemption and a mortgage. This order is very commonly neglected. The work presents many difficulties to inexperienced Revenue Officers, but they are gradually learning how it should be disposed of. It is a sign of the importance attached to one system of land record and registration that money-lenders, to whom lands have been hypothecated as security, now resort to all kinds of expedients to bring such mortgages within

the definition of "mortgages with possession" in Rule 46, under Sections 28, 36 and 46 of the Land Revenue Act, in order to have them entered in the mutation register and embodied in the annual record.

I notice this year again that Collectors have seldom availed themselves of the provision empowering them to fix one spot within a patwáris' circle at which all the mutations of that circle may be attested. In some cases the exercise of this discretion would be beneficial.

Rules 116 and 117 provide that kánúngos are not to be employed on work not prescribed in the rules, without the express sanction of the Financial Commissioners. I am glad to be able to report that this rule is more carefully followed than it was, especially as regards the district and office kánúngos.

Inspection by district officers.

8. Under the orders of Government it is now part of my duty to report upon the nature and extent of the inspection work done by District Officers and their assistants. I therefore go through the inspection notes of these officers in the tahsíl minute books whenever I inspect a tahsíl. I find that this work is more carefully attended to than it used to be. But I found in one case—that of the sádr tahsíl of Gurgáon—that there had been no inspection by the Deputy Commissioner since 1890, and none even by the Revenue Assistant since May 1889. This last omission was certainly inexcusable. The present District Officer had only recently arrived. I pointed out the omission to him, and have no doubt that the omission has since been rectified. The work generally had been well attended to. The inspection note by the Officiating Deputy Commissioner of Dera Ismail Khan on the Bhakkar tahsíl was a particularly good one.

Work of district kánúngos.

9. The district kánúngos in most districts are efficient men, energetic, and up to their work. But there are exceptions. The district kánúngo of Bannu struck me as deficient in the physical and mental energy required for the post. The district kánúngo of Gurdáspur was looked upon as somewhat inefficient; but his work, when inspected this year, showed improvement, and he had spent 214 days on tour. District kánúngos should be young and energetic and thoroughly efficient. Such, however, occasionally, I regret to say, show discontent with their position when appointed, and an inordinate desire for rapid promotion. The touring of these officials is generally good, the average number of days spent on tour being 180. I always examine the diaries of these officials. I notice a common tendency, in their inspection of patwáris' work, to look into work which has not been inspected by field kánúngos, rather than work which has been so inspected. This is a waste of power. The district kánúngo should mainly direct his enquiries to the work of field kánúngos, and he should see that the checks applied by them are full and adequate. It was often observed that the distribution of their time spent on tour was faulty, an undue number of days being devoted to those localities in which their own houses were situated, or which were more congenial to them for other reasons—such as climate, facility of communications, and so on. Hazára was a notable instance of this tendency.

Field kánúngos.

Field kánúngos, as a rule, know their work and can do it, but they do not always choose to do, and require a good deal of supervision, and some driving. The old class of kánúngo is dying out, and the new men are an improvement on the old. I am now very particular regarding the grant of certificates of efficiency; but there is now such a demand for this class of employment that, if District Officers will take the necessary trouble, only really good men need be selected. When I visit a tahsíl I always cause a statement to be prepared showing exactly what circles were visited by each kánúngo in each month, and I have suggested to District Officers that they should call upon each of their field kánúngos to submit a similar statement, through the district kánúngo and Revenue Assistant, to the Deputy Commissioner for scrutiny. This is done always in settlements, and would have a very good effect in districts not under settlement also. The result of my enquiries is to show that the touring in the months when crop inspections are proceeding is usually good, but often irregular in other months. The

attention of district kánúngos and Revenue Assistants should be specially directed to seeing that the field kánúngos do their work thoroughly: it is the field kánúngos work to see that the patwáris do theirs. The field kánúngos of Umballa are probably as efficient a body of officials as most. In that district detailed *jamabandís* are systematically checked holding by holding, although this is not actually prescribed. Attestation of this kind has also been done in Jullundur. The field kánúngos in Bannu were found less efficient than in other districts.

A tendency on the part of Tahsíldárs to keep field kánúngos in attendance while on tour was sometimes noticed: this was specially the case in Gurdáspur tahsíl.

Patwáris.

The actual inspection of patwáris' papers generally gave satisfactory results. Most of the patwáris are quite capable of doing their work well if kept up to the mark. In some districts their work is certainly heavy—notably in those in which there are large areas under fluctuating assessments, as in Dera Ismail Khan, Bannu and Muzaffargarh. In this last district especially, the distribution of *chher* labour adds greatly to their work. This is also the case in Mooltan.

Patwári candidates.

Patwári candidates are of a more highly educated type than formerly, and the proportion who have passed the Middle School Examination is larger than it was. Some have even passed the Entrance Examination. There is generally no lack of candidates, but the partial recognition of the hereditary principle still restricts selection unduly.

Quarterly business returns.

10. Quarterly statements of progress in the maintenance of village records are scrutinised by the Director, and submitted to the Financial Commissioner as heretofore, and this continues to prove a very useful check.

The above gives a brief general idea of the results of my inspection, which are embodied in notes submitted to Deputy Commissioners, Commissioners, and Financial Commissioner. But there is one part of my inspections, not the least valuable, of which no record can be kept, and that is the sort of informal conference which is always held at the end of my detailed inspection. When I inspect the sadr tahsíl, for instance, the Revenue Assistant, the Tahsíldár,—possibly the Naib-Tahsíldár,—the district kánúngo, the field kánúngos of the tahsíl, and the office kánúngo, will be present. Each of these is encouraged to speak freely of his work, to ask any questions on points on which he desires advice, and to bring forward his difficulties. The result often resembles the "heckling" of a would-be member of parliament. Some come armed with long strings of questions, which are not always easy to answer. But the Director of Land Records has always had the experience of a settlement, and has seen the work in every other district of the Province, and is, therefore, often able to set difficulties at rest which have already been dealt with elsewhere. In the same way, District Officers can often be very materially assisted by information as to what is done elsewhere; and it is sometimes the most senior and experienced officers who derive advantage in this way. They know exactly what the difficulties are, and get material help merely from an account of what is done by other officers elsewhere. It was remarked some years ago, when the status of the department was under discussion by a high official then Secretary to Government, that self-effacement was one of the most important qualifications for success in the Director. The work has been carried on on these lines, but it is just possible that the result has been that the department has run some risk of having the value and results of its work under-estimated in consequence.

Duties of Director.

11. There has been little formal change in the duties entrusted to the Director, except that he has been directed to enquire into the preparation of price currents for submission to the Commissariat Department; and he has also been more directly employed in preparing the way for approaching settlements than heretofore. His main duty, in connection with the land record system, is to see that the subordinate staff of kánúngos and district kánúngos are thoroughly efficient, that the system pursued

throughout the Province is sound and correct, and the record work done on a proper system. The task is in itself no light one; and though immense progress has been made in this direction, much remains to be done, and constant efforts are required to prevent slackness. It is difficult to show, in so many words, what the department has accomplished in the last ten years, for it has been the policy throughout for the Director to work alongside of the District Officer, and to leave all actual executive orders to him. The Director is an adviser and expert, and the value of his advice depends upon his knowledge and experience, and the readiness of others to profit by them. I feel bound to say that this readiness has been present in almost every case.

The amount of work which has to be done in connection with the Civil Veterinary Department, in the direction of horse breeding, horse fares, cattle fares, cattle disease, Veterinary Assistants and the Lahore Veterinary College, continues to increase. These subjects now form a very important branch of the Director's work and take up much of his time.

A few general remarks on the revenue staff are all that are called for here. I made more detailed remarks last year.

Revenue staff.

The Revenue Assistant, I think, continues to be the weak point in the chain, as remarked in my last report. In consequence of my observations in that report, I was directed specially to note on the qualifications of the Revenue Assistants in districts visited by me, and I have done so regularly in my inspection notes. Some are first-rate men, but they are not all so. Transfers among Revenue Assistants are presumably an unavoidable evil; but it is clearly desirable that no change should be made in the Revenue Assistant of a district, except at long intervals, when it can possibly be prevented. I came across cases of changes of this kind which were no doubt called for in the general interests of the administration, but which were certainly bad for the particular work with which this department is concerned.

It is also the custom in some districts, where there are outposts in charge of Assistant and Extra Assistant Commissioners, to entrust the work of the Revenue Assistants to the officer in charge of the subdivision for the area included in that subdivision. This is doubtless an excellent plan on other grounds, but its results have not been good in several instances as regards the work with which I am specially concerned. It often leads to a want of uniformity of methods in the district; and the officers in charge of outposts, being young, inexperienced Assistant Commissioners, are often quite without the knowledge which is essential to the most difficult post of Revenue Assistant. Its effect on the record work of the subdivision is generally injurious.

As regards the work which comes under my inspection, there is no doubt that the class of Tahsíldárs and Naib-Tahsíldárs is distinctly improving.

Really good district kánúngos are not easily got, and, when got, are likely not to remain long. The Director has the power of veto over this appointment, but very rarely finds it necessary to exercise it. Good men are now being ready to accept the post, but are apt to be too anxious for speedy promotion out of it.

Field kánúngos.

As regards field kánúngos I have little to add to the notes made above regarding my inspections. If District Officers will exercise the necessary care in selection, there are plenty of good men to be had for this post.

I need not repeat the observations made in paragraph 13 of last year's report on the patwári. His *morale* and attainments are improving year by year. In one of the frontier districts I found two men of really good Musalmán families working as patwáris in the hopes of rising through the ranks of the revenue staff. The provision that all field kánúngos must serve as patwáris for a time has, *inter alia*, done a great deal to raise the status of the appointment, as well as the great improvement of late in pay and prospects. Since I took over the office of Director the rates of pay and divisions into grades of the patwáris has been revised in favour of the patwári in no less than 21 out of the 31 districts of the Province.

Promotion of kánúngos.

During the last two years 12 field and office kánúngos have been promoted to superior posts.

Quinquennial revision of estimated outturn of crops.

12. With a view to the preparation of the quinquennial return, showing the average yield per acre of the principal crops of the Punjab, prescribed in Circular No. $\frac{17}{24}$, dated 27th June 1893, from the Government of India, experiments are now conducted in 14 districts on the following crops: rice, maize, sugarcane, *jowár*, *bájra*, cotton, wheat, barley, gram and rape. All these crops are not experimented on in every district, a selection having been carefully made of the experiments best suited for each. These experiments are generally carefully conducted, and will give valuable results. They are carefully watched and tabulated in my office, and the quinquennial revision will be made in 1899, when five years of experiments are complete. These experiments were commenced under instructions issued by this Department in September 1894. The experiments are always supervised by an officer of gazetted rank—European, when possible. Some experiments in particular, made in the Ferozepore district last year, were very carefully supervised and reported on by the Assistant Commissioner. A separate report on the Lahore Agri-Horticultural Gardens is submitted annually. There are no experimental farms in the Punjab.

Agricultural experiments.

13. The gardens do not afford very large scope for the conduct of agricultural experiments, but I am glad to report that I have at last succeeded in renting a small area, amounting to 2 acres, of very suitable ground, most conveniently situated, just behind the gardens themselves. On this plot I propose to carry on a series of experiments, mainly directed to the discovery of the most suitable cereals for similar tracts and the production of improved seed. Some autumn crops were sown on the ground, but merely as a preliminary to the regular course.

As regards the experiments made on the old land during the year under report, a strip of the reclaimed piece of land near the menagerie, mentioned in paragraph 15 of last year's report, amounting to $\frac{1}{15}$th of an acre, was dressed with burnt earth from the adjacent brick mounds and sown with huskless barley. The remainder of the plot was manured in the ordinary way and sown with the same kind of barley. The respective average outturn per acre were: dressed with burnt earth, 1,013½ lbs. per acre; with stable manure, 914⅔ lbs. per acre.

Again, as last year, the portion dressed with burnt earth gave the largest amount of seed, although not quite so much as in the previous years. The heavy hail damaged the crop, so that the outturn from the whole plot was not what was expected. In the ensuing cold season the $\frac{1}{15}$th of an acre, which was dressed with burnt earth, will be manured, and the remainder of the plot, which was manured, will be dressed with burnt earth.

Egyptian cotton.

The three varieties of Egyptian cotton mentioned in the previous year's report did not suffer so much from insect pests as they did last year. A great deal of the crop is lost as the plants are still in full bearing when the temperature falls too low to allow of the pods maturing. The seeds have been sown earlier this year, so that there may be an earlier and longer bearing period. These cottons would probably do better in places where the winter does not set in so early and is not so severe as it is in Lahore, and in land less impregnated with saline matter, which causes the soil to be very cold and the plants to contract both below and above the soil. Districts east of Jullundur would probably be more suitable. A few plants have been cut down at a height of two feet from the ground. These commenced to make fresh growth before the seed germinated, and will most probably come into bearing a month earlier than plants raised from freshly sown seed.

A small quantity of a new variety of Egyptian cotton (name not given) was received through the British Consul-General at Cairo. These seeds were unfortunately received two months after sowing time, and suffered very much, shortly after germinating, through the heavy rainfall on 18th and 19th June. Very little seed was obtained. This seed was sown on 15th March last, and it is hoped that sufficient seed will be produced to distribute some to various districts.

It was found that the Egyptian cotton could not be properly carded by the native method. It adheres to the string of the bow used in this Province for the purpose. This is to be regretted, as otherwise the cotton promised to be a decided success.

Australian wheat.

The three varieties of Australian wheat mentioned in last year's report appear to be entirely unsuited to this country, as even the purple straw, which produced fair seed last year, has deteriorated so much that it does not appear to be worth while to continue the experiment.

Palestine wheat.

Of the older varieties grown in previous years, the Palestine wheat only was grown during the year under report. This variety has steadily improved in quality and outturn; the average outturn during the year under report being 2,037 lbs. per acre, against 1,555 lbs. per acre in the previous year.

Cape and other barley.

The Cape and English "Chevalier" barleys mentioned in last year's report show an improvement both in grain and in outturn. Cape barley gave an average per acre of 1,435 lbs., and English "Chevalier" 1,765 lbs.; the latter being a better outturn than that given by the older varieties.

Huskless barley.

The huskless barleys were equal in outturn to the previous year. The chocolate barley gave an outturn of 1,629 lbs. per acre, which is 503 lbs. more than in the previous year, whilst the "Danish Chevalier" averaged 281 lbs. and "Canadian Beardless" 113 lbs. less per acre than in the previous year.

Algerian oats.

There was a slight improvement in the quality and yield of the Algerian oats, but it still falls short of the older varieties.

Oats.

Oats were much more damaged by the hailstorm than the barleys, and consequently gave a very poor outturn; the average per acre being "Oats Welcome" 446 lbs., and "Prize Cluster" 646 lbs.

Italian gram.

The two varieties of Italian gram mentioned in previous year's report germinated freely and were doing well until a hailstorm occurred. The whole of the plants were completely cut up and not a single plant escaped.

Cytisus Prolifera.

This appears to be totally unsuited to Lahore, as none of the plants came to maturity, all dying off before coming into bloom.

Glycine Hispeda, or Sofa bean (Bhat).

A small quantity of this bean was received through the Deputy Commissioner, Simla, and tried here, but gave no promising results; the outturn being 349 lbs. of grain and 582 lbs. of fodder per acre. The plant is very dwarfish and spreading. The acclimatised seed will be sown in the ensuing year to ascertain whether it can be made to yield a better return.

American corn.

American corn was also much damaged through the heavy rainfall on 18th and 19th June, when the plants were only a few inches high: of one variety, the "Tirhoot," only a few plants remained. Three new varieties were tried during the year under report. Their outturn was very small, but this must be expected for the first year or two. The averages per acre were: "Ninety Days" 388 lbs.; "American Early" 776 lbs. The "White Horse Tooth" proved an entire failure.

Of the other varieties "White Field" gave the best result, *viz.*, an average per acre of 1,634 lbs., the other varieties giving as follows: "Smedley 1,267 lbs., "Yellow Field" 1,002 lbs., "Early Driver" 976 lbs., and "Kulu" 90 lbs. per acre.

American corn (*Sorghum saccharatum*), cottor, thaeffe, wheat, barley, and oat seed have been distributed to District Officers and zamíndárs. The number of varieties employed is now carefully restricted to those which have given promise of good results.

Distribution of seed.

The autumn rains in the year under report (autumn 1894) were unusually heavy, and experiments made with seed of American corn (*Sorghan saccharatum*) and cotton supplied from the garden were unsatisfactory in consequence in most cases.

The seeds for rabi crops were unfortunately sent out too late by the Superintendent, Agri-Horticultural gardens, but Palestine wheat and more than one kind of barley gave encouraging results notwithstanding in several instances.

Experiments made with imported American corn seed by the Deputy Commissioner of Simla were spoiled by the unusual and excessive rain of 1894.

English potatoes.

English seed potatoes obtained from Messrs. Carter and Co. were distributed to growers in the Kángra district. The unusually heavy rains ruined the crop. No report of any outbreak of potato disease has been received this year.

Sweet potatoes.

The proposed experiment in American sweet potatoes had to be abandoned owing to the difficulty and expense of obtaining them from America.

Vine disease.

Diseased vine rootlets received from Kashmír have been sent to the Agricultural Chemist for examination. They were sent on to the Superintendent, Indian Museum, and he reports that he cannot find a single specimen of an insect among them. It was feared that they were infected by the Phylloscera.

American vine cuttings.

Some American vine cuttings supplied to the Kohát district are reported to be flourishing. At Siálkot they are also doing well. No reports have yet been received from other districts.

Mahogany.

The mahogany trees supplied from Agri-Horticultural gardens continue to do fairly well in Delhi.

Inga dulcis mimoseæ.

The *Inga dulcis mimoseæ* has done well in Delhi, where it is stated to be well suited to farm fences. It did fairly well in some other places.

Date palm.

No further distributions of date seed or offsets was made during the year but the reports received show that the results of previous distributions have been generally good. This was not the case in Gurdáspur, Hissár, Muzaffargarh or Lahore, but the reports received from Karnál, Delhi, Simla, Gujránwála, Rohtak, Umballa, Jhang, Gujrát, Mooltan, Shahpur and Hoshiárpur are favourable in varying degrees.

Marram grass.

The marram grass received from the Government of India for experiment in the Jullundur and Hoshiárpur *chohs* is reported to have proved a complete failure in Jullundur. In Hoshiárpur two-thirds of the seed did not germinate, but the remaining portion did well and is considered promising.

Bone dust.

Bone dust is never used by zamíndárs as manure in this Province, and no further experiments were made with it.

Supply of fruit trees from the Government Agri-Horticultural gardens and Mahásu orchards.

14. During the year 3,400 grafted fruit trees were placed at my disposal from the Mahásu orchards. This number appears to me still to be considerably below the amount which may be reasonably expected. The Punjab Government contribute Rs. 1,500 towards the maintenance of these orchards; a contribution which was in fact originally made in order to enable the Municipality to secure the services of their late trained Superintendent. I understand that the Committee have lately dispensed with the services of this Superintendent, but I have not been informed what measures have been taken to supply his place. I visited the orchards last summer, and submitted a note to the Municipal Committee on various points connected with its management.

The trees were distributed to the districts of Simla, Kángra, Gurdáspur, Ráwalpindi, Hazára and Kohát.

This work must be considered to have been decidedly successful. I give an extract below from a letter on the subject received from the Deputy Commissioner, Simla, Mr. Steedman :—

"Before I took charge of the district, trees were distributed mostly to Government officials who owned estates in the Simla station and adjoining Native States. Since 1893 the distribution to Native States has continued, but the greater portion of the allotment for that year and the next has been made over to the two Tahsíldárs for distribution to zamíndárs who have taken a keen interest in fruit culture and apply before an allotment is made to Tahsíldárs. The same is the case with several natives in Simla who possess small plots of land, and to whom I gave a few trees in 1893 and 1894. Applications from Europeans and Natives are now sent in to me long before you have stated what number will be given for the year, and it is found that trees applied for are not sufficient to meet the demand. In 1893 and 1894 trees were also made over to the Forest Department and to Mr. Goad, who owns a farm at Tara Devi. Since people have heard that trees are given by the Deputy Commissioner to any one who will look after them, their first step on becoming possessed of landed property is to apply for fruit trees.

"I am of opinion that for some years to come all fruit trees allotted to me will be taken up : the only drawback is that sufficient care is not taken of the trees by the zamíndárs."

Mr. Maconochie writes from Gurdáspur :—

"The fruit trees sent to this district have been freely distributed in this district, the greater number being sent to Bakloh and Dalhousie, where they are doing well. I think there is a likelihood of further extension of fruit culture within this district."

The Deputy Commissioner, Ráwalpindi, writes that the District Board are arranging for a further extension of their fruit nurseries at Chenapáni, near Murree. He adds :—

"The fruit trees supplied to this district since 1890 from the Mahásu orchard have proved a great success, especially the apples. A good many of the young trees received from time to time have been made over to various zamíndárs in the hills, and it is believed that they are giving good results."

Favourable reports have also been received from Hazára. Fifty orange trees were supplied to the Deputy Commissioner of Simla to be distributed to zamíndárs residing on the low hills near Sabáthu from the Agri-Horticultural gardens.

A special effort is being made to spread the cultivation of the Spanish chestnut in the Punjab hills. Sir E. Buck very kindly supplied me with a note on his own experiments with this valuable tree, and, from the replies received from a number of District Officers to a Circular letter issued by me, the effort seems to promise considerable success. The orchard pupil, whose education was paid for from funds placed at my disposal, was employed in the Simla hills throughout the year. He visited and inspected various orchards, and assisted in pruning, grafting, and in instructing the recipients of fruit trees how to manage them. The Deputy Commissioner of Simla recommended his employment for another year, and this has been agreed to. He is considered to have done good and useful work.

15. Further unfavourable reports have been received on the shallow sugar evaporating pan of Messrs. Thomson and Mylne from Delhi and Gurdáspur. The pan is found unwieldy and difficult to work, and does not recommend itself to the zamíndárs. A copy of these unfavourable reports was sent to Messrs. Thomson and Mylne, who have supplied further instructions regarding its use; but although I understand that this pan has given excellent results elsewhere, it does not seem to make way in the Punjab.

Agricultural implements : Sugar evaporating pan.

No further experiments have been made with the steam thresher, but a thresher worked by bullocks was supplied by Messrs. Thomson and Mylne for experiment at the Amritsar Fair. The Secretary to the Municipal Committee, Mr. Nicholl, reports that it proved a great success, the *bhúsa* being fine and soft and the grain uninjured, although the crops threshed were not quite dry. Threshing machines of this kind have been supplied to the Deputy Commissioners, Delhi and Ferozepore, for further experiment, and the machine seems likely to prove a success.

Threshing machine.

Sultán water-lift.

A Sultán water-lift was obtained from Madras and fitted up for experiment on a well in the Lahore Agri-Horticultural gardens. The arrangement is certainly ingenious, but it has not proved a success here in actual working. The animals which work it are under a continual strain, and as they pull on the level they lose the advantage of their own weight when going down the inclined plane, as in the case with the ordinary country *charsa*. But the lift will receive a further trial.

Inspection of rain-gauges.

16. The inspection of rain-gauges and registers was borne in mind throughout the year. The office kánúngos are in charge of these at tahsíl head-quarters, and in every case they were found capable of properly reading the measuring glass, and the registers were found properly kept and up to date. More inspection work might have been done by District Officers, but it is probable that in some cases inspections were made but not recorded. I myself inspected 63 rain-gauges during the year, District Officers in all inspected 49, and Commissioners inspected 11. In some cases I found the gauges insecurely fixed and not properly levelled, and in one case, in Bannu, very badly placed under the shade of trees. These matters were brought to the notice of the local officers and the Meterological Reporter.

Collection of products for Imperial Institute.

17. The collection of dyed and printed silk, cotton and woollen goods for the Imperial Institute, which was mentioned in last year's report, has been completed, and Mr. Andrews has succeeded in getting together a very interesting collection of specimens.

Various other collections of minor importance were also made for the same institution, such as specimens of honey and bees' wax, *Carthamus* (safflower), Indian madder (*Rubia cordsfolia*), *Dustisea canabena* (*akálbir*), and so on.

Entomology: Locusts.

18. Locusts did no damage during the year. In May last a flight was observed in Muzaffargarh flying from north to south, one in Dera Gházi Khan flying east to west, one in Kohát flying north-west and one in Jhelum flying south-east, but none of these alighted or did any damage. In the Bannu and Dera Ismail Khan districts only were eggs laid and young locusts hatched out. Warned by the experience of late years the people immediately destroyed them completely. None have been seen since.

Insect pests.

A species of beetle did considerable damage to the melon and young cotton crops in Dera Ismail Khan. Specimens were sent to the Indian Museum and identified as the *Jalodis Atkinsoni*, one of the *Buprestid* tribe. Its local name is *Binda*. The monsoon rain killed off the pest.

Œnescens.

The appearance of a beetle causing injury to rice was reported from Kángra, and specimens sent to Calcutta were identified as *Hispa œnescens*, a well known rice pest of Bengal.

Plague of voles (field rats).

The plague of voles, or field rats, mentioned in last year's report, appears to have in great measure disappeared.

Analysis of soil and formation of kankar.

19. Experiments on the analysis of soils and the production of *kankar* are proceeding. The examination of the soil in the Agri-Horticultural garden seemed to show that *kankar* could be formed very rapidly in saline soil; but as there was some doubt as to whether the nodules found might not have passed through the sieve through which the soil had been sifted in the first instance, a fresh experiment has been made on a cubic yard of soil carefully passed through a sieve of small meshes. The experiment will take some years to complete, but is a very interesting one, which may give very instructive results.

Soil of Hoshiárpur chohs.

Specimens of soil from the *chohs* of Hoshiárpur were sent to the Agricultural Chemist for analysis. Although it was not to be hoped that any remedy for the damage done could be discovered by this method, the result of the analysis is interesting as showing that it appears likely that the damage done by the sandy deposits in these cases would eventually work itself out. But it does not appear how long this process is likely to take. I give an extract from Dr. Leather's report on the case:—

"In conclusion it would appear generally that the surface soils are, agriculturally, distinctly poorer than the subsoils at present, but they will eventually become as good. They are in two cases especially very much coarser, and this means that they would dry very rapidly indeed, for they will not prevent water from passing downwards, and it will also evaporate much more quickly from their surface. The proportion of nitrogen is, as usual in Indian soils, very low indeed, but it is not lower than I should have expected.

"The total amount of phosphoric acid is not high, but it appears to be generally in a readily available form.

"The total amount of potash, lastly, is distinctly high, as is also that portion of it which is soluble in hydrochloric acid. The portion immediately available is in all cases fully ample for the requirements of average crops of cereals.

"The most important question in relation to these soils is: At what rate do they disintegrate and decompose,—*i.e.*, how soon may these new deposits be expected to become, agriculturally, equal to their subsoils?"

Bruceabad farm.

20. A separate report on the Bruceabad farm is submitted as usual. This year the income was only Rs. 7,821: this is better than the previous year, when it was only Rs. 6,428, but far below the income, Rs. 16,717, of 1892-93.

The crops were generally very poor, and prospects are not good for the coming harvest.

The tenants were found to have sold, what they were pleased to call, their rights of occupancy, in some cases, to Hindu shopkeepers. As a rule against such transfers has been in force ever since the farm was started, such transfers were annulled, and the tenants in question warned that if such alienations were attempted again they would be evicted.

Public gardens.

21. Statements regarding the public gardens in the Delhi and Lahore districts are given in Appendix B. Part of the cost of an iron tank erected in the Shálamár gardens comes into the accounts of this year.

No further tree planting was done in the Shálamár and Shahdara gardens. The income exceeds the expenditure this year. In the Delhi gardens there has been a further increase in the number of fruit trees.

Archæology.

22. A silver handle for a *chauri*, or fly whisk, was discovered embedded in a wall at Nágar Castle in Kúlu.

An interesting collection of inscribed stones was found by Major Deane in the Eusafzai Valley and sent to the Lahore Museum. No other discoveries of objects of archæological interest have been reported during the year.

Comparison of monthly receipts with treasury accounts.

23. The comparison of monthly receipts of mutation fees and patwári fees accounts with the statement of treasury credits furnished by the Accountant-General has been regularly made. They generally agree, but differences have been several times detected and promptly enquired into.

Budget and expenditure.

24. The agricultural grant for the year was Rs. 1,700.

The expenditure was as follows:—

	Rs.
Experiments	562
Rain-gauges	9
Miscellaneous	10
Subscriptions, &c.	48
Economic products	3
Total ...	632

Civil Veterinary Department.

25. Separate reports are submitted on the working of the Civil Veterinary Department in the Province and on the Lahore Veterinary College.

Provincial Veterinary Establishment.

The attention of the Superintendents of the Civil Veterinary Department has been mainly devoted to horse breeding operations, but they have been able to give more attention than during the previous year to the supervision of Veterinary Assistants and cattle disease. Veterinary Captain Pease, Assistant Inspector-General, Civil Veterinary Department, is now making a tour in the Province in connection with these latter subjects, but his work belongs to the current year and not to that under report. The District Boards of the Province have done a great deal in the direction of employing Veterinary Assistants who have been through the course at the Lahore Veterinary College. There are now 67 of these employed in the Province. The only districts without any are Simla, Montgomery, Peshawar, Kohát and Dera Gházi Khan.

The superior staff of the Provincial Civil Veterinary Department consists of two Superintendents, Civil Veterinary Department, employed in connection with horse breeding, cattle breeding and the supervision of the subordinate staff; and two officers, a Principal and a Professor, in the Lahore Veterinary College, with a native teaching staff.

The Veterinary Assistants have not been fully utilised in the past owing to the absence of proper supervision, but arrangements are now being made under which this will be provided for. A three-years' course has been arranged for at the Lahore Veterinary College, and we shall shortly be able to obtain Senior Veterinary Assistants from that institution, who will be employed in the supervision of the Junior Veterinary Assistants, whose numbers will probably be shortly increased. I foresee that an additional Superintendent, Civil Veterinary Department, will eventually be a necessity if this important work is to be thoroughly carried out. Two men cannot cover the great distances and accomplish all the work required in connection with horse breeding, cattle breeding, horse and cattle fairs, cattle disease, and supervision of the subordinate Veterinary staff and inspection of Veterinary dispensaries. The supervision of the Provincial Civil Veterinary Department, which is in the hands of the Department of Land Records and Agriculture, has added very greatly to my work and that of my office; and as I trust it will undergo very considerable development in the near future, it is likely to continue to do so. It has also been arranged that in future the report of the Civil Veterinary Department is to be written by the Director, instead of his forwarding the original reports of the Superintendents, Civil Veterinary Department, with a short review.

Provincial horse and pony breeding.

Provincial horse and pony breeding has made considerable progress. The total number of horse and pony stallions at work in the Punjab belonging to local bodies was 51, as in the previous year. The total number of mares covered, however, rose from 2,107 to 3,137. This great increase is to be mainly attributed to the fact that the attempt to impose the brand on mares brought for service by district stallions was judiciously abandoned. District mule breeding does not appear to be so popular as horse and pony breeding, which I do not look upon as a subject for regret. Some progress has been made, and 5 donkeys were employed against 4 in the previous year, and 235 mares were covered against 175 in the previous year. I think it is far more desirable to encourage horse and pony than mule breeding.

Cattle breeding.

As regards cattle breeding, bulls from the Hissár farm are supplied annually to districts on indent, and continue to give excellent results in many places. But they are not equally suited to all districts, and special enquiries are now being conducted with a view to supplying the various districts with a good stamp of bull suitable to their special requirements.

Cattle disease.

26. As regards the treatment of cattle disease, there are now 16 Veterinary dispensaries in the Province doing good work, and it is also the main duty of Veterinary Assistants while on tour to treat the cattle belonging to the zamíndárs. I hope to see great progress in this direction in the near future as the result of the better system of supervision which, I trust, will very shortly be introduced. It is also in contemplation to start new Veterinary dispensaries in other districts. The castration of colts unsuitable for stud work has received a good deal of attention, and excellent results may be looked for from this. One thousand one hundred and thirty-three

animals were gelds, against 543 in the previous year. The grant of a small money premium to the owners of the animals castrated and a small fee to the operator has had good results.

A special annual report on the Lahore Veterinary College is submitted by me every year in July. The College continues to grow in popularity and to do excellent work. Arrangements have now been made to institute a three-years' course for Senior Veterinary Assistants, and a very useful horse-shoeing class for *nálbands* has been started during the year.

The number of patients treated during the year fell little short of 4,000. A new ward for dogs has also been added.

Establishment of stallion depôt in the Punjab.

27. An important proposal for the establishment of a depôt for the imperial stallions employed in the Punjab has been under consideration during the year. An excellent site has been selected near Ráwalpindi, after careful consideration, in consultation with the Inspector-General, Civil Veterinary Department, and the local officers, and it is to be hoped that the important work will soon be taken in hand.

Statistics of disease amongst animals.

28. The statistics of disease and mortality among cattle are at present very unreliable. As the subordinate Veterinary staff is gradually developed improvement may be looked for in this direction. No unusual amount of disease obtained during the year, and no extraordinary outbreak occurred. Arrangements have now been made for the immediate report of any outbreak direct to the Superintendent, Civil Veterinary Department, by the Veterinary Assistants. *Surra* appears to have been virulent among horses in the Hoshiárpur district and to have caused many deaths.

Statistics supplied by patwáris for brood mares.

29. The statistics regarding brood mares and stock supplied by patwáris have not yet proved satisfactory. The patwáris did not understand what was required of them. I have asked the Civil Veterinary Department to draw up a note, giving directions as to how the statements supplied are to be filled in, and will arrange that the field kánúngo shall instruct the patwáris how this should be done. The system is new, and much better results may be looked for when once it is fairly understood. Táhsíldárs now attest the statistics kept by zilladárs regarding brood mares, and stock in 20 cases taken at random in each tahsíl. This is found to be a valuable check. A Circular was drawn up during the year in vernacular by this Department, pointing out the advantages of horse breeding, and circulated broadcast among horse-owners and zamíndárs. Horse breeding by aid of imperial stallions continues to make good but unequal progress. There are many who think that the interest of horse breeding would be much furthered, and the industry much extended, if all the restrictions now imposed on the transfer of brood mares which have received the brand were removed. But there seems no immediate prospect of this course being followed, and the *pros* and *cons* of the question cannot be discussed here.

Reports on the Provincial Civil Veterinary Department, Lahore Veterinary College.

30. As special reports on the Provincial Civil Veterinary Departments and the Lahore Veterinary College have to be submitted later, I think it unnecessary to go into further detail here. Under orders of Government these subjects are not now noticed in the Annual Revenue Report.

Personal Assistant and Superintendent.

31. Lála Páira Rám held charge of the office of Personal Assistant throughout the year, with the exception of two months, during which he was on privilege leave, and my Superintendent, Mr. Pestonji, held charge.

Lala Páira Rám has, as heretofore, been of great assistance to me throughout the year, and Mr. Pestonji continues to work to my entire satisfaction.

I have the honor to be,

Sir,

Your most obedient servant,

FRED. A. ROBERTSON,

Director of Land Records and Agriculture, Punjab.

APPENDIX A.

Report on the working of the Bruceabad Farm for 1894-95.

I.—Establishment.

There has been no permanent change in establishment during the year under report, but as *rakhs* Sonhara and Ghauspur was cultivated, a separate *karawa* was appointed temporarily. The total expenditure on establishment for the year was Rs. 1,111-13-6.

II.—Income for the year.

The total income for the year under report was Rs. 7,820-11-7, as against Rs. 6,428-2-6 in 1893-94, thus showing a slight increase. The result is disappointing, as at one time it appeared that there would be a very large increase, prices having recovered somewhat; the price obtained for wheat (the staple crop) having risen from Rs. 1-15-0 to Rs. 2-8-0, and the flooding by the river having been satisfactory as noted in last year's reports. However, on the 30th March, Mr. Watson, who was then in charge of the Rájanpur Subdivision, noted that he had inspected the farm and found that the crop was below the average—"it is only on one or two bits of ground that there are good crops of wheat; the rest of the wheat is poor and choked with weeds, the grain being small and scanty." He continues by noting that the gram is also "not a good crop." It appears from the statements of the tenants that the weed referred to was wild oats and this shows that a good flood is needed to deposit silt on the land, which is evidently being exhausted. The ordinary flood or "*chal*" deposits no silt. A good deal of damage was caused on the threshing-floor by crickets.

III.—Tenants.

It was found during the year that many tenants had sold or mortgaged, what they were pleased to call, their rights of occupancy in their lands to Hindu shopkeepers, and were paying them "*Anwanda.*" As a rule against this has been in force on the farm for some years, steps were taken to annul these transferences of righs that did not exist, each case being dealt with on its merits, and the tenants were fairly warned that in future if any such case were brought to light the tenants would be evicted.

IV.—General.

As above noted the year under report has been a disappointing one, as at the commencement of the year there was every prospect of a bumper harvest and the hopes so raised were by no means fulfilled. There are some disputes about the boundaries of the farm which are being decided as settlement operations progress—the principle being observed is that the boundaries of the last settlement are to be maintained in all cases.

The prospects for next year are not good. A very large area of Bruceabad proper is out of cultivation owing to the total failure of river floods. On the other hand, there seems reason to expect that prices will rise somewhat. The prices obtained for the kharíf crops show a decided rise.

R. M. LOWIS,

Dated 27th November 1895. *Assistant Commissioner.*

A.—Statement showing gross income of the Bruceabad Farm for three years.

Serial No.	Name of village.	Name of crop.	1892-93. Income in kind.	1892-93. Cash.	1892-93. Total.	1893-94. Income in kind.	1893-94. Cash.	1893-94. Total.	1894-95. Income in kind.	1894-95. Cash.	1894-95. Total.
			Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
1	Bruceabad	Kharíf	684 3 9	296 15 6	981 3 3	714 0 4	365 10 0	1,079 10 4	392 3 3	201 0 3	593 3 6
		Rabi	10,540 10 7	359 12 8	10,900 7 3	4,343 3 10	408 14 3	4,752 2 1	4,664 2 4	683 14 6	5,348 0 10
2	Páhárpur	Kharíf	5 12 6	...	5 12 6	9 3 9	...	9 3 9	16 9 8	...	16 9 8
		Rabi	1,463 11 6	6 8 0	1,470 3 6	452 1 0	25 6 0	477 7 0	885 5 1	21 6 6	906 11 7
3	Rakh Tukra Jágír Janúbi	Kharíf	286 13 5	2 3 0	289 0 5	20 7 9	...	20 7 9	131 7 10	2 12 0	134 3 10
		Rabi	...	...	...	...	...	...	...	...	...
4	Do. do. Shumali	Kharíf	...	...	...	...	...	...	...	...	...
		Rabi	...	...	...	...	...	...	...	...	...
5	Pátti Sarkári	Kharíf	104 13 0	1 0 0	105 13 0	0 8 1	...	0 8 1	36 6 9	...	36 6 9
		Rabi	3 8 6	...	3 8 6	...	...	...	42 4 3	...	42 4 3
6	Rakh Sohara	Kharíf	378 5 9	...	378 5 9	...	...	...	39 1 9	...	39 1 9
		Rabi	1,285 4 11	3 6 0	1,288 10 11	...	...	..	226 1 3	...	226 1 3
7	Rakh Ghauspur	Kharíf	95 15 6	...	95 15 6	84 3 6	...	84 3 6	1 8 2	3 0 0	4 8 2
		Rabi	1,198 2 8	...	1,198 2 8	4 8 0	...	4 8 0	473 8 0	...	473 8 0
		Total	16,047 6 1	669 13 2	16,717 3 3	5,628 4 3	799 14 3	6,428 2 6	6,908 10 4	912 1 3	7,820 11 7

ASSISTANT COMMISSIONER'S OFFICE,
RAJANPUR :
Dated 14th November 1895.

R. M. LOWIS,
Assistant Commissioner.

B.—Statement showing the area, in Kanals, of villages connected with the Bruceabad Farm in the Rájanpur Tahsil.

Serial No.	Name of villages.	Settlement area.						1892-93.						1893-94.						1894-95.					
		Area.	Ghair Mumkin.	Jadid.	Qadim.	Uncultivated.	Cultivated.	Area.	Ghair-mumkin.	Jadid.	Qadim.	Uncultivated.	Cultivated.	Area.	Ghair-mumkin	Jadid.	Qadim.	Uncultivated.	Cultivated.	Area.	Ghair-mumkin.	Jadid.	Qadim.	Uncultivated.	Cultivated.
1	Bruceabad	37,401	7,409	2,277	23,834	...	3,881	37,398	4,037	65	1,120	311	31,865	37,398	2,248	...	7,795	3,739	23,616	37,398	2,248	...	6,587	3,311	25,252
2	Pahárpur	37,565	892	503	29,511	...	6,659	21,408	258	349	17,696	742	2,363	21,972	199	226	17,758	1,358	2,431	22,316	199	226	17,758	1,663	2,470
3	Rakh Tukra Jágir Janubi.	8,548	405	...	7,675	...	468	8,552	406	1,045	6,032	319	750	8,552	406	1,045	5,978	821	302	8,552	403	1,045	5,840	469	795
4	Rakh Tukra Jágir Shumali	1,754	108	4	1,233	...	409	1,754	108	216	585	224	621	1,754	108	216	579	684	167	1,754	108	...	892	510	244
5	Patti Sarkari ...	107,560	3,239	1,584	102,236	...	501	107,560	3,239	267	103,576	76	402	111,244	1,320	303	108,653	...	968	111,244	1,320	303	107,270	1,457	894
6	Rakh Sohara ...	26,138	136	...	26,002	...	..	26,138	136	3,284	17,555	2,648	2,515	26,138	136	3 284	17,555	5,163	...	26,138	136	928	21,234	528	3,312
7	Rakh Ghauspur ...	35,413	234	...	35.179	...	..	35,414	234	...	25,164	2,328	7,688	35,414	234	...	25,164	8,895	1,121	35,414	234	...	25,164	7,615	2,401

ASSISTANT COMMISSIONER'S OFFICE,
RAJANPUR:
Dated 14th November 1895.

R. M. LOWIS,

Assistant Commissioner.

C.—Statement showing demand, realization and balances of the Bruceabad

Serial No.	Name of villages.	Name of crops.	1892-93.							
			Balance of previous harvest.	Demand for current harvest.	Total.	Realized.			Balance recoverable.	Balance of previous harvest.
						A.—Credited into treasury.	*B.*—Spent direct.	Total of *A* and *B*.		
			Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Bruceabad, Pahárpur, Patti Sarkári, Jágír Janúbi and Shumáli.	Kharif ...	2,506 10 9	1,381 13 2	3,888 7 11	2,213 12 3	...	2,213 12 3	1,714 11 8	11,455 3 3
		Rabi	1,714 11 8	12,374 3 3	14,088 14 11	2,598 0 2	271 11 6	2,869 11 8	11,455 3 3	6,334 5 4
2	Refund of takávi advances	Do.	555 6 0	...	555 6 0	555 6 0	...	555 6 0	...	...
3	Rakha Sohára and Ghauspur ...	Kharif ...	867 2 1	474 5 3	1,341 7 4	347 2 1	20 0 0	367 2 1	974 5 3	2,403 7 7
		Rabi	974 5 3	2,486 13 7	3,461 2 10	952 11 4	105 0 0	1,057 11 4	2,403 7 7	104 14 10

ASSISTANT COMMISSIONER'S OFFICE,
RAJANPUR:
Dated 14th November 1895.

Farm for three agricultural years ending 30th September 1895.

1893-94.						1894-95.						
		Realized.							Realized.			
Demand for current harvest.	Total.	*A.*—Credited into treasury.	*B.*—Spent direct.	Total of *A* and *B*.	Balance recoverable.	Balance of previous harvest.	Demand for current harvest.	Total.	*A.*—Credited into treasury.	*B.*—Spent direct.	Total of *A* and *B*.	Balance recoverable.
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1,109 13 11	12,565 1 2	4,828 12 8	1,401 15 2	6,230 11 10	6,334 5 4	4,557 11 1	780 7 9	5,338 2 10	3,421 12 3	284 7 6	3,706 3 9	1,631 15 1
5,229 9 1	11,563 14 5	6,152 14 6	853 4 10	7,006 3 4	4,557 11 1	1,631 15 1	6,297 0 8	7,928 15 9	3,867 4 7	482 1 0	4,349 5 7	3,579 10 2
...	...	...	...	...	...	...	...	...	...	...	...	...
84 3 6	2,487 11 1	2,382 12 3	...	2,382 12 3	104 14 10	...	43 9 11	43 9 11	...	...	...	43 9 11
4 8 0	109 6 10	88 11 6	...	88 11 6	*20 11 4	43 9 11	699 9 3	743 3 2	43 9 11	...	43 9 11	699 9 3

* Strike out Rs. 20-11-4 *vide* last year's foot-note.

R. M. 'LOWIS,

Assistant Commissioner.

APPENDIX B—(*i*).

Statement showing Receipts and Expenditure of Shálamár and Shahdara Gardens during the year 1894-95.

1	2	3	4	5	6	7	8
Name of gardens.	Area.	Receipts.	Amount.	Expenditure.	Amount.	Existing fruit trees.	New trees planted.
	A. R. P.		Rs. A. P.		Rs. A. P.		
Shálamár	39 2 10	Actual opening balance on 1st April 1894.	—257 13 3	Pay of fixed establishment ...	1,487 11 0	2,908 mango, 655 pomegranate, 17 peach, 230 pear, 15 orange, 618 lemon, 302 guavas, 64 mulberries, 302 dates, 77 loquát, 2 apple, 18 fig, and 15 grapes.	No new trees have been planted during the year.
		Income of gardens	1,500 0 0	Water-rate...	273 14 0		
		Land revenue of Bághbánpur ...	1,164 0 0	Expenditure in connection of Charágán Fair.	120 8 3		
		Rent of wooden shops at Shálamár gardens.	24 0 0	Cleaning tank and gardens ...	47 3 0		
		Fees from Shálamár Dák Bungalow.	9 0 0	Construction of an iron tank at Shálamár gardens.	939 12 1		
		Fees from Charágán Fair ...	623 13 0	Other items	82 10 0		
		Total Receipts ...	3,320 13 0	Total Expenditure ...	2,951 10 4		
		Net Receipts ...	3,062 15 9	Actual closing balance on 31st March 1895.	111 5 5		
				Grand Total ...	3,062 15 9		
Shahdara	48 1 28	Actual opening balance on 1st April 1894.	883 8 7	Pay of fixed establishment ...	564 0 0	279 mango, 117 jáman, 114 lemon, 170 dates, 491 oranges, 1,420 pomegranate, 216 Malta orange, 18 mulberries, 9 guavas, 7 pear.	Ditto.
		Income from gardens	605 0 0	Pay of temporary establishment	138 0 6		
		Sale of bricks from gardens ...	202 1 6	Price of bhúsa, gram, &c. ...	51 12 3		
		Sale proceeds of green wheat ...	54 0 0	Price of tinds	20 10 0		
		Income of land in old serai attached to gardens.	45 0 0	Price of bullocks	86 4 0		
		Total Receipts ...	906 1 6	Hire of bullocks	28 4 0		
		Grand Total ...	1,789 10 1	Other items	89 7 0		
				Total Expenditure ...	978 5 9		
				Actual closing balance on 31st March 1895.	811 4 4		
				Grand Total ...	1,789 10 1		

J. G. CROST HWAITE,

For Deputy Commissioner, and President, District Board.

ANNUAL REPORT

OF THE

DEPARTMENT

OF

LAND RECORDS AND AGRICULTURE,

PUNJAB,

For the year ending 30th September 1896.

Published by Authority.

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

Lahore:
THE "CIVIL AND MILITARY GAZETTE" PRESS,
Contractors to the Punjab Government.

1897.

No. 29.

FROM

M. W. FENTON, ESQUIRE,

Revenue Secretary to Government,

Punjab and its Dependencies,

TO

THE SENIOR SECRETARY TO FINANCIAL COMMISSIONER, PUNJAB.

Dated Lahore, 13th April 1897.

File No. 4.

Revenue and Agriculture.

Agriculture.

SIR,

WITH reference to your letter No. 165, dated 12th March 1897, submitting the Progress Report of the Department of Land Records and Agriculture, Punjab, for the year 1895-96, I am directed to say that the Lieutenant-Governor concurs in the Financial Commissioner's estimate of the excellent work done by Mr. Robertson, who will no doubt be gratified by the reference to the high state of efficiency attained by the Village Record Agency in this Province contained in the recent Resolutions of the Government of India reviewing the work undertaken by the Imperial and Provincial Departments of Agriculture since their organization.

Sub-head No. 491.
File No. 5.

2. I am also desired to invite the attention of the Financial Commissioner to paragraph 2 of Mr. Thomson's letter No. 60, dated 24th March 1896, in which it was requested that in future when there was nothing to notice on any particular point on which a report is required under standing orders the fact might be stated, and to observe that there is no mention made in the report of the following points :—

(*a*) Utilization of bone manure *vide* Punjab Government No. 100, dated 10th July 1891, to Director of Land Records and Agriculture).

(*b*) Experiments in planting and grass sowing commenced by Mr. Gladstone in the Umballa District (*vide* Punjab Government No. 78, dated 13th May 1893, to Director of Land Records).

(*c*) Maintenance of traverse survey and boundary marks (*vide* Punjab Government letter No. 91, dated 6th May 1892, to your address).

I have, &c.,

M. W. FENTON,

Revenue Secretary to Government, Punjab.

Punjab Government Press, Lahore—28-6-97—350.

No. 30.

FROM

M. W. FENTON, ESQUIRE,

Revenue Secretary to Government,

Punjab and its Dependencies;

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,
REVENUE AND AGRICULTURAL DEPARTMENT.

Dated Lahore, 13th April 1897.

File No. 4.

Revenue and Agriculture.

Agriculture.

SIR,

I AM directed to submit, for the information of the Government of India, three copies of the Annual Progress Report of the Department of Land Records and Agriculture in the Pnnjab for the year 1895-96, together with copies of a letter No. 165, dated 12th March 1897, from the Senior Secretary to the Financial Commissioner, Punjab, and of my letter No. 29, dated 13th April 1897.

2. I am to say that further enquiry is being made with reference to the matters discussed in paragraph 11 of the report.

I have the honor to be,

SIR,

Your most obedient Servant,

M. W. FENTON,

Revenue Secretary to Government, Punjab.

Punjab Government Press, Lahore—28-6-97—350.

No. 165, dated Lahore, 12th March 1897.

From—C. J. HALLIFAX, Esquire, C. S., Senior Secretary to the Financial Commissioner, Punjab,
To—The Revenue Secretary to Government, Punjab.

I AM directed to forward a letter No. 402, dated 20th February 1897, from the Director of Land Records and Agriculture, Punjab, submitting the Annual Progress Report of the Department under his charge for the year 1895-96, and to convey the following remarks of the Financial Commissioner.

C. M. RIVAZ, Esquire, C. S. I.

Sub-head No. 491.
File No. 5.

2. Soon after the termination of the year under report Mr. Robertson relinquished the post of Director of Land Records after holding the office for upwards of seven years, and discharging the duties attached to it with marked zeal and efficiency. The steady progress which has been made during this period in improving and developing our system of land records is in no small degree due to Mr. Robertson's careful local inspections and close supervision of the work in all its branches.

3. Two important measures have been carried out during the past year, namely, the abolition of abbreviated *jamabandís* and the introduction of abstract village note-books, corresponding to the pargana books of the North-Western Provinces. The first of these measures will materially lighten the work of the subordinate revenue agency and enable them to devote more care and attention to the preparation of the all-important quadrennial detailed *jamabandís*, while the abstract village note-books will provide the Collector and his Assistants with a ready means of keeping themselves acquainted regarding the condition for better or worse of every estate in the district.

4. Mr. Robertson is, the Financial Commissioner thinks, justified in his opinion that the Patwári and Kánúngo establishments are improving from year to year. It is highly important that Kánúngos should be kept to their proper duties as prescribed in the rules, and the Financial Commissioner is surprised to learn that the Deputy Commissioner of Gujrát has neglected to observe the standing orders in this respect. He has been called upon for an explanation.

5. The Financial Commissioner does not think that it is necessary or desirable to place District Kánúngos on the Náib Tahsíldárs' list, as the Director of Land Records and Agriculture suggests. A District Kánúngo of five years' standing is eligible, under the present rules, for the appointment of Tahsíldár without passing through that of Náib Tahsíldár, so the good men of this class have well assured prospects of further promotion.

6. Mr. Robertson has made some useful remarks regarding the tendency of officers who attest mutations to reject cases on insufficient grounds. Inspecting officers should pay special attention to the subject.

7. The matters noticed in the concluding paragraphs of Director's Report are not under the Financial Commissioner's control.

Punjab Government Press, Lahore—28 6-97—350.

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LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

No. 402.

FROM

M. F. O'DWYER, ESQUIRE, I.C.S.,

Director of Land Records and Agriculture, Punjab,

TO

C. J. HALLIFAX, ESQUIRE, I.C.S.,

Senior Secretary to Financial Commissioner, Punjab.

Dated LAHORE, *the 20th February* 1897.

SIR,

Introductory.

I have the honor to submit the Annual Progress Report of the Department of Land Records and Agriculture, Punjab, for the year 1895-96. The office of Director was held during the year by Mr. F. A. Robertson. The following report has been written entirely by him.

Director's tour.

2. During the year under report I visited the head-quarters of 15 districts and 36 tahsíls and the circles of 48 field kánúngos. I travelled 5,225 miles by rail and 1,067 miles by road, and spent 205 days on tour. Actual marching under canvas was done in four districts only, *viz.*, Jhelum, Gujrát, Kángra and Gurdáspur.

Inspections.

3. The nature of my inspections was the same as in previous years. The kánúngos and their work always occupy the principal part of my attention and show a decided tendency to improve. The work of patwáris is only inspected by me, from time to time, to test the supervision work of the kánúngos and to see that the system pursued is correct and instructions properly understood. Special notes on the results of my inspections of field kánúngos' work and of tahsíls and head-quarter offices are given lower down.

Kánúngos' examination.

4. Examinations of candidates for the post of kánúngo were held at the head-quarters of 13 districts during the year. As it frequently happens now, that only one or two candidates in a particular district are ready for examination, and may therefore have to wait for some time before getting a chance of obtaining a certificate, I adopted the plan of holding examinations for the candidates from all the districts of a division at one central place. Such examinations were held at Delhi and Ráwalpindi during the past year, and the plan worked satisfactorily, except that, particularly in the case of Jhelum, a number of candidates who had failed only a short time before in an examination held at the district head-quarters were sent up again a very short time afterwards to Ráwalpindi, where many of them failed again. The candidates examined this year were distinctly of a better type than those examined last year. One hundred and ninety-one candidates presented themselves, of whom 131 passed the test. The educational qualifications of candidates for employment in the Revenue line are steadily improving, and it is now no very rare thing to come across substantive patwáris who have passed the Entrance Examination. The number of candidates is still too great considering the possibilities of appointment, and District Officers would do well to keep the number down. Very good men can now-a-days be obtained as kánúngo candidates, but all District Officers do not take the same amount of care to obtain the best men. Subject to the possession by the candidate of a certificate from Director of Land Records and Agriculture, the appointment lies entirely with Collectors. The examinations are carefully conducted, and a high standard of excellence is

insisted on. Part of the examination is conducted *vivâ voce* by me, and this is found an excellent test, not only of the candidate's fitness, but, when the candidate is already employed, of the manner in which work is done in the district.

The rules allow unpassed men to be appointed pending examination. There are now 8 unpassed kánúngos in the Province.

Patwári establishment.

5. The patwári establishment did not undergo extensive revision in any district. For the next five years Patwári Funds will contribute Rs. 96,380 annually towards the cost of the kánúngo establishment of the Province. Proposals are now under consideration for amalgamating the District Patwári Funds into one Provincial Fund, a process which will have many advantages. The Patwári Fund is in a thoroughly solvent condition throughout the Province. The Financial Commissioner's orders regarding *patwárkhánás* embodied in my Circular Letter No. 9, dated 27th June 1895, which were the result of prolonged discussion, seem to be working satisfactorily. Patwáris are not so frequently absent from their circles as formerly. During the past year, after consulting a number of experienced officers, I submitted a proposal to abolish the "hereditary principle" altogether in the selection of patwáris from 1902, *i. e.*, in five years from date. This proposal had the Financial Commissioner's support, and having been approved by the Punjab Government will be now carried out.

Record offices.

6. The separation of records of rights and other village records from the ordinary district record-room has not been carried out in any district during the year under report. It is now complete in 19 districts. This is a very desirable arrangement, but its progress is stopped at present by the difficulty felt everywhere for want of funds.

General results of Director's inspection.

7. The following were among the points which specially attracted my attention during my tours of inspection and which deserve mention here.

Jamabandís.

These were found to be generally carefully prepared, but I noticed that in many cases the field kánúngos do not supervise this work properly. I still found that in many cases the detailed *jamabandís* were sewn up in clumsy covers which did not preserve the papers properly. The mutation sheets attached to the abbreviated *jamabandís* have now to be appended to the detailed *jamabandís*, and the orders are that the binding should be done at the tahsíl. The worst binding seen was in Pálampur and Kángra. I found in several cases that the amount of mortgage-money was still entered in the *jamabandís* which should not be done. In more than one case I found that in joint holdings when a shareholder cultivated an area in excess of his share, the excess was returned as cultivated by non-occupancy tenants. This is not a correct entry. At present detailed *jamabandís* are prepared in every village once in four years. In the other three years abbreviated *jamabandís* only are prepared. It was found in practice that these abbreviated *jamabandís* were of little real value, although legally they possessed a presumption of correctness. Their preparation gave a great deal of trouble, and, when prepared, they are of little use. Consequently after consulting a number of the most experienced officers, I submitted proposals to the Financial Commissioner to give up the preparation of these abbreviated *jamabandís* altogether, requiring at the same time a much more careful scrutiny and attestation of the detailed *jamabandís* when prepared. This proposal was approved by the Financial Commissioner and sent on to Government for orders, and sanction has just been accorded to it. This is a very important change and one which will give much relief to patwáris, but which will entail more care on the part of supervising officers. The danger in the proposal is that it makes the *khasrah girdáwari* (crop inspection register) of very great importance, and gives the patwáris greater opportunities of tampering with the records. Due precautions will, however, be taken to prevent this, and it is to be hoped that the change will be welcomed by the subordinate revenue staff as a relief from labor which was not of much value, and that it will enable us to prepare a far more reliable record every fourth year which is a matter of the very greatest importance.

Mutation work.

The work in some districts is still very heavy, so that it is almost impossible for the Tahsíldárs and Náib-Tahsíldárs to keep the arrears down without extra help. Ten Extra Náib-Tahsíldárs were again sanctioned by Government, and these were employed in the districts of the Jullundur Division, Amritsar, Lahore, Gurdáspur, Siálkot, Gujrát, Ráwalpindi and Bannu, and proved most useful.

Altogether 662,212 cases were attested during the year against 726,672 in 1894-95 and 628,683 in 1893-94. The largest number of cases 57,793 were attested in Dera Gházi Khan where settlement is in progress, and consequently a large number of old cases came to light when the records were being revised. Hoshiárpur is next in importance, where more than 40,000 cases were disposed of. Leaving aside Simla which is not an important district in point of revenue work, Montgomery disposed of the least number of cases, only 1,057. This is due to the fact that the settlement staff was engaged in work connected with survey, &c., and very few *jamabandís* were prepared during the year.

The work connected with mutation cases is now well attended to, but more care is required in the rejection of cases. There is a tendency on the part of Revenue Officers to refuse cases simply because the patwári desires this. I found in Dera Ismail Khan that a Revenue Officer had rejected 63 cases on the patwári reporting that the case was wrongly entered, before the field kánúngo had attested them. Officers are still shy of permitting mutation in cases where the owner happens to be a minor, although possession has actually been transferred. Alienations by or on behalf of minors undoubtedly require special care, but they should not be indiscriminately rejected on the ground of minority alone, and where the alienee is a minor, such rejection is often absurd. Cases of prospective possession are constantly refused, although the parties agree to the change of names. The transfer is made at a time when there is no crop in the ground and no actual possession has been taken. Such cases are almost invariably refused which causes much unnecessary trouble and delay. This was specially noticed in Naráingarh in the Umballa district. In cases of correction of mistakes I find that the practice differs in different districts. For instance, I found in Muzaffargarh that all that was required was a proof in a summary enquiry that the entry to be corrected was wrong, while in the adjoining district of Mooltan the Collector held that no change could be made in case any of the parties objected to it, even though there was no dispute about possession. This was due to a misapprehension of the meaning of the words "Facts proved or admitted to have occurred," used in Section 37 of the Land Revenue Act, which has since been set right by the opinion of the Government Advocate circulated by Financial Commissioner. Owing to a misapprehension about the meaning of Section 36 (2) of the Land Revenue Act, Tahsíldárs and Náib-Tahsíldárs were found to send up cases for the orders of the Revenue Assistant, whenever there was any dispute or contention among the parties, though the orders require that only cases should be sent up for superior officers' orders in which a Revenue Officer cannot satisfy himself as to which party is in possession. I have observed a tendency on the part of certain kánúngos to show a fictitious number of pending cases in the quarterly return. I have, therefore, made a point when inspecting an office to examine the materials from which the return is prepared. In some cases I found that no such materials were forthcoming. Sheets of rejected cases are not always carefully kept in the tahsíl, nor are they properly indexed. These sheets are not entered in any register, and it is therefore important that they should be entered in the index affixed to each file.

Note-books.

Mistakes are still found in the totals of circle and tahsíl note-books. Sufficient care is not taken by the patwárís in abstracting figures for the annual and quadrennial statements, and I observed that field kánúngos are also lax in supervising this part of their work. Some of the statements should always be checked by the Tahsíldárs and their Náibs, and in cases of serious mistakes those concerned should be severely dealt with. In future all these village note-books will have their columns printed biglot, and the figures will be English numerals. The remarks made by Tahsíldárs in Statement No. X of the village note-books on the condition of villages inspected by them continue to improve, but are still too often

colorless and useless. Remarks under orders of the Financial Commissioner are to be recorded by Tahsíldárs and selected Náib-Tahsíldárs only.

Biglot village note-books and abstract village note-books.

In future abstract village note-books will also be kept up. These books which have been prescribed after careful consultation and consideration will give in a convenient form a few of the most important statistics of each village, so that the Collector or any one examining them will be able to see at a glance how matters are progressing. They contain pages for remarks by Collector, English-speaking Revenue Assistant or Assistant Collector specially empowered to enter them, and they are intended to be taken on tour by District Officers. They are intended to supplement, not to supersede, the village note-book, and it is hoped they will be found very useful. They are somewhat of the same character as the parganah books of the North-Western Provinces in a form suitable to the Punjab, the headings are all biglots, and the office kánúngo will fill in the columns in English numerals, so that they can be consulted without the necessity of reading vernacular.

Miscellaneous registers.

These are now generally properly kept up. In many districts, however, the register of lambardárs was found to be incorrect. The *jamabandís* often showed names different from those in the registers. It is a good plan to have periodical comparisons made of the names in the *jamabandís* and the registers; and where this is done, there are very few mistakes. Umballa was the best in this respect.

The Patwári Fund Account is now correctly kept. Very few items of expenditure came to my notice which were irregular. In one case (Karnál) I found that no notice was taken of my remarks at the previous inspection, and irregular payments were allowed to continue, notwithstanding their having been put under objection.

Touring of field kánúngos.

Field kánúngos now arrange their touring well, and circles are seldom left without a visit during the month. There is a tendency on the part of field kánúngos to spend the largest number of days in that circle in which they reside themselves. I also find that field kánúngos who are candidates for the post of Náib-Tahsíldár, and who have once acted as such, do their touring irregularly; the worst case was noticed in Muzaffargarh. In one of the circles of Dera Ismail Khan also the touring was bad. In Gujrát I found that the sadr kánúngo had a large quantity of extraneous work thrown on him which kept him at head-quarters and prevented his spending a proper number of days on tour. I find that superior officers spend their time in checking individual patwárí's work. This does not serve any useful purpose; attention should be paid to how the field kánúngos are doing their duty. Rules 116 and 117 provide that kánúngos are not to be employed on work not prescribed in the rules, except with the sanction of the Financial Commissioner. This rule is fairly well observed, but not so well as it should be. I found the district kánúngo of Gujrát much overburdened with extraneous work, and this was the case with the tahsíl office kánúngo also.

Inspection of tahsíls by officers.

8. Tahsíls were found to have been regularly inspected by Deputy Commissioners and their Assistants, except in the case of Gurgáon which was noticed last year. Some of the Revenue Assistants now do this part of their work very thoroughly. The notes of Lála Kesho Dás in Ludhiána particularly struck me as searching and useful.

Work of district and field kánúngos.

9. The post of district kánúngo is one which it is somewhat difficult to fill satisfactorily. A really good man is required, but, when he is obtained, he is apt to deserve further promotion immediately. Much has been done to improve his status and prospects of promotion, but I am by no means sure that it would not be a good plan to add the names of all district kánúngos to the list of Náib-Tahsíldárs, making no change in their pay, but insisting on their passing the Náib-Tahsíldárs' Examination. This would give them a better status than they have at present, but would make no difference in their pay and so involve no additional expense. They might simply be shown as Náib-Tahsíldárs seconded as district kánúngos. Most of the district kánúngos at present in office are capable men. Proposals

have once or twice been made to empower district kánúngos to attest mutations, but this is in my opinion most undesirable, as their inspection work requires their whole time and should not be interfered with. The Financial Commissioner has endorsed this view. I need not repeat the remarks made on this class of officers last year.

Field kánúngos.

Field kánúngos, I think, continue to improve, and the educational qualifications of the candidates are now much higher than they were. The field kánúngo is a very important link in the chain of revenue work. It is mainly on him that devolves the work of teaching the patwári his duty and seeing that he does it. The difficulty is in properly supervising the field kánúngo himself, and district kánúngos should devote themselves mainly to this work and not to the direct supervision of patwáris. Plenty of good men can be got now to fill vacancies, if only Deputy Commissioners will take the necessary trouble in the selections.

Patwáris.

As regards patwáris there can be no doubt that this class is daily improving. This is due to a variety of causes, *inter alia*, to improvement in education, better supervision and better prospects of promotions. One great difficulty in the past has been that, in many districts, the patwáris belonged almost entirely to one class, few or none coming from the agricultural classes. Instructions were issued in the rules under the Land Revenue Act to appoint as many of the agricultural class as possible, but as hereditary claims were recognised, this was practically a dead letter. I am glad to say, however, that at last this principle has been definitely set aside as noted above in paragraph 5. This is a great step forward and will enable Collectors in future to prevent the patwárships of the district from falling too much into the hands of one class, as is too often the case at present. Sons and near relatives of patwáris, if qualified, will still have at least an equal chance under the rules with others, and, as a matter of fact, a much better chance, but the Collector's hand will no longer be tied. There should now be little difficulty in accepting no candidate who has not passed the Middle School Examination, except in frontier and a few other districts. Some of the candidates are now even "Entrance passed" men. During my ~~tour~~ of office I have consistently urged the necessity of paying our patwáris well and improving their prospects if we are to hope ever to stamp out corruption. I took back with much satisfaction to the fact that the pay and prospects of patwáris in every part of the Province have been improved since I took over charge of the office I am now relinquishing.

Quarterly business statements.

10. Quarterly business statements have been, as usual, submitted through the Director of Land Records and Agriculture to the Financial Commissioner. These are carefully scrutinized and are a most useful check on the progress of the work, as the state of record work generally, and of mutation work in particular, can be seen from them at a glance, and appropriate notice taken at once by the Financial Commissioner of any matter requiring it.

Duties of Director.

11. There has been little change in the duties of the Director of Land Records and Agriculture during the year under report, save that he has been employed more in connection with the preliminary work of re-settlement than was formerly the case, and that during the past year he has had much more work than usual in connection with general questions regarding the Province at large, and special references, than heretofore. The work in connection with the Civil Veterinary Department, of which he is nominally the Provincial head, continues to increase. During the cold season I made an extended tour in Jhelum with Mr. Talbot in connection with the approaching re-assessment and re-measurement of that district, and also made a tour in Mooltan in connection with settlement operations there. If a Settlement Commissioner be appointed, as seems probable, presumably these duties will not in future be imposed on the Director of Land Records and Agriculture. Several large and important changes in general revenue work have this year been suggested by me, notably the introduction of a village abstract note-book (parganah-book), the abolition of the abbreviated *jamabandís* and more careful attestation of the detailed *jamabandís*, and the abolition of the recognition of hereditary claims for the posts of patwáris.

The revision of the Mensuration Manual for patwáris has also been undertaken during the year, and in accordance with a resolution of the Agricultural Conference, held in Lahore in January 1896, I have been engaged in the preparation of a simple Reader on our record system for the schools of the Punjab. As regards work connected with the Civil Veterinary Department, I do not consider that matters are altogether on a satisfactory footing. It was clearly the intention of the Government of India to provincialize the Department, but as a matter of fact, as pointed out also by the Director of Land Records and Agriculture in the North-Western Provinces, this has not been done. The Superintendents, Civil Veterinary Department, are almost entirely under the control of the Inspector-General, Civil Veterinary Department, who grants them casual leave, settles their tours and practically acts as their immediate Executive Chief, employing them almost entirely on horse-breeding operations. The result is that all work connected with cattle is entirely neglected, and that, as a Province, we are far worse off in regard to such matters than we were when we had our own Veterinary Surgeon to the Punjab Government, who really was at our disposal, while the present Superintendents, Civil Veterinary Department, certainly are not. The fact is that the Civil Veterinary Department is at present practically the old Horse-breeding Department under a new name, with an Imperial object, under an Imperial head of Department. In this Province where we have spent much money on a first class Veterinary College and employ some 70 Veterinary Assistants, this is not satisfactory, and a great waste of local funds is sometimes incurred for want of supervision of the Subordinate Veterinary Establishment which the Local Government have supplied.

The only remedy I can see at present is to practically re-create the appointment of Veterinary Surgeon to the Punjab Government by giving us a third Superintendent, Civil Veterinary Department, who shall be really at the disposal of the Punjab Government and under the control of this Department for employment in supervising the Subordinate Civil Veterinary Establishment, and in matters connected with cattle, doing nothing in the horse-breeding line which will be left to the other two Superintendents, Civil Veterinary Department. If the Civil Veterinary Department were really Provincial, this would of course not be the best use of material, but as it is, this is, in my opinion, the best practical solution of the difficulty.

Revenue Assistants.

The remarks I made in paragraph 11 of last year's report on Revenue Assistants need not be repeated. The principal Revenue authorities of the Province are fully alive to the necessity of providing good men for this post, and steps have been taken towards this end. The remarks I made, as the result of my own observations, on the appointment of young inexperienced Assistants in charge of Sub-Divisions to be Revenue Assistants for those Sub-Divisions were not concurred in by the Financial Commissioner, and I therefore refrain from any further expression of opinion in that sense. The necessity for good, experienced Revenue Assistants is recognised on all hands, as so far the supply is not quite equal to the demand. Tahsíldárs and Náib-Tahsíldárs are improving, and, as a rule, take more interest in Revenue record work than formerly. Mutation work is sometimes a severe tax upon them. I have already noted above (paragraph 9) on the work of district kánúngos and field kánúngos and patwáris.

Revision of estimates of yield of crops.

12. Experiments in the outturn of various classes of crop continue to be made in several districts and are carefully tabulated. They are always supervised by an officer of gazetted rank. A quinquennial revision of the estimates of yield of the various crops will be made with the aid of the knowledge thus gained in July 1897. We have no experimental farm in the Punjab, but some agricultural experiments are annually carried out in the Agri-Horticultural Garden for which a separate annual report is submitted.

Agricultural experiments.

13. As we have no experimental farm in the Punjab, we endeavour to do what we can in the way of agricultural experiment and the acclimatising of seed in a small way in these gardens at Lahore. We have only 5 acres at our disposal for this purpose including

the 2 acres recently obtained on lease. Still, I think, we may fairly claim to have continued to do something, and several kinds of American corn supplied from the gardens have been adopted and added to the crops of the Province, and the improved Palestine wheat has been a distinct success.

The experiment made on reclaiming a piece of very inferior land impregnated with salts has proved very interesting and may be valuable.

The whole of the reclaimed piece of land mentioned in last year's report was top-dressed (and then lightly ploughed in) with burnt earth from adjacent mounds and sown with the huskless Government barley, giving an average outturn per acre of 1,468 lbs. as against an outturn with stable manuring in the previous year of 914⅔ lbs. per acre. This increase may be due in part to the soil becoming less tenacious through cultivation. The dry weather experienced at sowing time and want of canal water at one time threatened to cause an entire failure. Taking this into consideration, I think the experiment may be considered fairly successful. In the ensuing year the whole plot will be manured and sown with cereal crops.

Egyptian cotton.

The seeds of four varieties of Egyptian cotton were sown on 15th March 1895 and gave an average outturn per acre as follows:—

	Seed.	*Cotton.*
	lbs.	lbs.
Hamauli	874	463⅛
Mitaffifi	718	361⅝
Egyptian white	634¾	252 5/16
Lord Cromer's	696 5/16	347½

This in comparison with the outturn of the previous year's sowings is a great improvement, the average per acre being then—

	Seed.	*Cotton.*
	lbs.	lbs.
Hamauli	348½	317
Mitaffifi	317	253½
Egyptian white	253	190

Comparison cannot be made with the fourth variety "Lord Cromer's," as that variety was practically a failure, owing to the seeds having been received too late. The outturn of seeds being so much greater than in the previous year, is due to the fact that the pods were not so much attacked by insects. Ratooning does not appear to suit these cottons, as, although they threw out vigorous young shoots, very few pods were produced.

The experiment of sowing this cotton in the autumn as a rabi crop, as suggested by Mr. Tata, will be made this year.

Barley.

The varieties "Cape," "Selected" and "English Chevalier" barley gave the best result, the first named giving an average outturn per acre 2,153 lbs., the second of 1,615 lbs., and the last of 1,590 lbs. These outturns, considering the dry autumn and spring and insufficient canal water supply, are very fair. The variety now grown under the name "Selected" is the produce of selected plump seed from "English Chevalier"; "Lucknow" and "Government" huskless barleys are very similar. The "Canadian Beardless" does not improve. The cultivating of the "Lucknow Huskless" and "Canadian Beardless" will, therefore, be discontinued in accordance with the views expressed by the Lieutenant-Governor in paragraph 3 of the Review of the Report of 1894-95.

Oats.

Only three varieties of oats were experimented on in the Agri-Horticultural Gardens, and the result will be reported next year.

Glycine hispeda (soja bean; bhat).

Acclimatised seed of this bean was sown, but gave even a worse return than the imported seed, a sowing of 1lb. of seed giving a return of 14oz. only. No further experiment will be made with this.

Agricultural seeds.

In consequence of the unseasonable weather, irregular and insufficient canal water-supply, the results of Palestine wheat and barley (excepting the "Cape" variety) were not as good as expected, the average outturn per acre being as follows:—

	lbs.
Wheat, Palestine	960
Barley, Cape	2,153
Do, Selected	1,615
Do.. English Chevalier	1,590
Do., Government Huskless	1,432
Do., Danish Chevalier	1,368
Do., Chocolate Huskless	1,292
Do., Lucknow do.	1,216
Do., Cape Beardless	950

Of "Chocolate Huskless" a very small plot is only grown, just sufficient to keep the variety from being entirely lost.

American corn.

The variety named "Kulu" after repeated trials is found to be unsuited to the Lahore climate, the outturn being very poor, although individual cobs are above the average size of other varieties. The varieties American "Early," "Ninety Days'" and "White Dent" have also proved unsuitable. An experiment was made in sowing the variety "Early Driver" at two different periods, *viz.*, on 20th April and 30th of May. The sowing of 20th April gave a much better result than that of 30th May, the respective outturns averaging per acre 1,368 lbs. ~~for~~ the first sowing against 1,045 lbs. of the late sowing. There may be a drawback to the early sowing, probably the land could not be got ready in time. The average outturn of the other varieties of American corn grown is as under—

	lbs.
Yellow Field	2,232½
White Field	1,714
White Smooth	1,290
Smedley	1,165½
Tirhoot	974

The first four named and "Early Driver" being the most promising varieties, will only be grown in the ensuing year, and the others discarded.

Sorghum saccharatum.

As there is practically no demand for this, no further experiments will be made.

Thaeff.

A plot of ·103 of an acre (one kanál) was sown with thaeff seeds. Half of this area was allowed to stand for seed, giving an outturn of 1·7 ounce only. The remaining half was cut twice and gave an average outturn per acre of 2,396 lbs. green fodder. If the season had been more favorable, a third cutting could have been made. The plant is only an annual, is sown in the beginning of April and dies at the end of September.

Seeds harvested.

The total quantity of the agricultural seeds (exclusive of oats which did not ripen in time) harvested during the year under report is as follows:—

	lbs.	oz.
Wheat, Palestine	354	0
Barleys	1,575	0
Oats	...	
American corn	2,350	0
Sorghum saccharatum	412	0
Cotton	214	6
Thaeff	1	7
Glycine hispida (soja bean)	0	14
Total	4,707	11

The whole of the American corn and cotton seeds have been distributed free of charge to District Officers. Wheat, barley and oats will also be distributed free of charge at the proper season.

Distribution of seeds to various districts.

14. A supply of acclimatised seeds was distributed to various districts from the Lahore Agri-Horticultural Gardens for experiment with the following result:—

Cotton.

Experiments were made with the acclimatised seeds of Garo Hill and Jari cotton in various parts of the Province; but owing to the unfavorable season the results were not generally satisfactory.

In Gurdáspur the seed was sown on land newly broken up, well ploughed and manured. It germinated fully, and did remarkably well, the outturn being very good. In Mooltan the outturn was below the average, compared with the country cotton, but it obtained a higher price.

American corn.

American corn was sown in 17 districts. Mr. Francis who tried the seeds in his own garden at Ferozepore writes under date 23rd November 1895:—

Four kinds of American maize received from you and tried this last kharíf in my own garden yielded as follows per acre in seed freed from the cobs:—

	Sérs.
Smedley	871
Yellow Field	1050
Early Driver	860
White Field	944

"The Smedley and Yellow Field are, I think, the most useful of these kinds. The Early Driver" is disfigured by black grains which constantly appear in the cobs. The white maize is decidedly inferior in flavor to the yellow and seems to have a harder skin * * * * The maize was sown at measured distances on the side of ridges at the rate of 8 sérs per acre."

In Siálkot the seed was distributed to influential zamíndárs who sowed it on well-irrigated land. The result was on the whole good. The seed germinated well and the plants grew from 5 to 9 feet in height. In some cases the crop was destroyed, but in others the yield was satisfactory, varying from 14 to 24 maunds per acre.

Sorghum saccharatum.

Sorghum saccharatum (*jowár*) was tried in Delhi, Gurdáspur, Jullundur, Gujránwála, Jhang and Dera Ismail Khan. In Delhi the seed germinated late, owing to scanty rainfall; but it grew well, and the *jowár* produced is considered to be of good quality. In Dera Ismail Khan the plant did not grow to any size and soon died as the soil does not appear to suit it. In other districts the experiment did not give satisfactory results.

Palestine wheat.

Palestine wheat and some varieties of barley were sown in different places, with varying results. In Karnál and Siálkot the yield of grain in the case of wheat was very good, being $13\frac{1}{2}$ maunds and $18\frac{1}{2}$ maunds per acre respectively. Ráwalpindi and Lahore also reported favorable results.

Oats.

Experiments were made with the different varieties of oats in 9 districts. The crop grew well and yielded good produce. In Bannu the plant rose to 4 feet, and 4 sérs of seed yielded $1\frac{1}{2}$ maund of grain. This was very satisfactory. It is generally cut green and used for fodder.

English potatoes.

No further experiments were made with English potatoes, as the crop failed last year owing to heavy rain, and no new seeds were imported from England during the year.

American vine cuttings.

In 1892 vine cuttings were imported from America and distributed to several districts in the plains. They do not appear to have met with success; but Kohát, Siálkot and Jhang report that they are doing well. Seven varieties of American grapes were experimented upon in the Lahore Gardens, three of which ripened fruit, but they appear to be suitable for dry climates rather than for a place like Lahore, and so no further experiments will be made here.

Mahogany.

There is only one mahogany tree left in the Agri-Horticultural Gardens, Lahore. The rest have died. The tree will not stand cold. In Delhi, however, there are 9 plants, some of which have attained the height of 17 feet. They continue to do fairly well there.

Inga dulcis mimoseæ.

The plant is doing well in Lahore, Gurdáspur, Jhang, Delhi and Gujrát. It has reached the height of 6 feet in Delhi and appears to be well suited for fences. The largest plant is reported from Gujrát where it has reached 14 feet in height and 7 inches in circumference.

Date-trees.

The offsets planted in Lahore are not doing well. Of the 22 in existence last year, only two have started into growth. The soil at Lahore is peculiarly unsuited for the date-palm. No reports have been received from other districts.

Murram grass.

Murram grass was distributed to 31 influential zamíndárs in the Hoshiárpur district, and they were asked to plant it out on embankments and other places suitable for the purpose. Altogether more than half an acre has been sown with this grass, but reports have not been received as yet as to the result of the experiments.

Zafiri cotton.

A small quantity of a higher class cotton called *zafiri* was received from Egypt through the Reporter on Economic Products. It was sent to the millers at Delhi for trial and expression of opinion. Mr. Harwood, Manager, Krishna Mills, Delhi, who examined the cotton, was of opinion that it was suited admirably for spinning 40s. to 60s. yarn, but that as the climate of Delhi was hot and dry, such fine counts of yarn could not be spun.

Supply of fruit trees from the Mahásu Orchards, Simla.

14. The Punjab Government continues to contribute Rs. 1,500 to the Simla Municipality for the maintenance of the Mahásu Orchards. A new Superintendent has been secured by the Committee, who has taken great interest in the orchards, and one result of this is that the full number of 5,000 grafted fruit trees was placed at our disposal for distribution. They were distributed to Simla, Kángra, Hazára, Ráwalpindi, Gurdáspur, Kohát, Bannu, Shahpur and Dera Gházi Khan. Four hundred trees were also supplied to the Political Officer, Malakand, for planting in the Chitral hills. The reports received from districts show that the fruit trees are doing well. The Deputy Commissioner of Kángra has distributed a number of them to the Gaddís who are anxious to have them and take an interest in planting and looking after them.

Mr. Wilson writes from Ráwalpindi—

> The District Board orchard and nursery at Simble near Murree continue to give every satisfaction. The garden has been extended by the acquisition of three acres of adjoining land during the past winter and the fruit trees received from time to time planted out in regular lines with proper intervals. It is expected that this garden will show good results in produce during the next two or three years."

At the request of the Director of Land Records and Agriculture, Bengal, 200 Ribstone Pippin apple grafts have been supplied to the Political Agent, Sikkim, for experiments in Darjeeling.

The orchard pupil whose services are placed at the disposal of the Deputy Commissioner of Simla is reported to be doing very useful work. He visited some 20 villages in different parts of the hills and pruned a large number of trees and transplanted others, which, but for his assistance, would have been spoiled by the zamíndárs. Sanction for retention of his services for another year has been given.

Spanish chestnut.

Some Spanish (edible) chestnut seeds were received from the Deputy Conservator of Forests, Bushire Division, this year, and were distributed to the districts of Gurdáspur, Ráwalpindi, Hazára, Kohát, Bannu, Shahpur and Dera Gházi Khan. Some were also sent to the Political Agent, Malakand. The result of these experiments will be reported next year.

15. No further reports have been received on the shallow evaporating pan of Messrs. Thompson and Mylne, but, as remarked last year, the pan does not find favor in this Province.

Agricultural implements (sugar evaporating pan).

The threshing machine supplied by the same firm, which is worked by two bullocks, was tried in Delhi and Ferozepore in the presence of a large number of zamíndárs. The report from Delhi is unfavorable, but that from Ferozepore is not so discouraging. The officer who tried the machine writes—

Threshing machine.

"By this machine two bullocks threshed out as much wheat as five could do by the ordinary process. * * * * The machine is so constructed that one may thresh fodder as fine or as coarse as one likes."

The only objection which the zamíndárs could advance was that the use of the machine meant expenditure which they said they could not afford to incur for threshing purposes.

Further trial of the Sultán water-lift has proved the lift to be a failure. It is an adaptation of the *charsa* which is only in use in a few districts of the Province and does not give as much water as the Persian wheel, whereas the strain on the bullocks is much greater. Ordinary Punjab bullocks cannot work this lift. If the draught is lightened by lessening the size of the cylinders then the lift of water is correspondingly reduced.

Sultán water-lift.

A rice-huller worked by steam power was exhibited at the Amritsar Cattle Fair during the year. It is an American invention and costs about Rs. 1,400. It worked at the fair for some ten days and was witnessed by thousands of zamíndárs who came from all parts to the fair. Mr. Nicholl who saw the machine working writes—

Rice-huller.

"The machine is for simplicity and excellence of work and output the best of its kind that I have yet seen."

A soil-inverting plough received from Sibpur was tried in the Jail garden, Lahore, and proved successful in deep ploughing. The Superintendent, Central Jail, who made the experiment writes—

Soil-inverting plough.

It ploughs quite 8 inches deep, turns over the soil, and thoroughly prepares the ground. It, however, requires a powerful pair of bullocks as the instrument itself is heavy, and, passing deeply into the soil, requires considerably more power to draw it than the ordinary country plough. Undersigned obtained a second plough of the same description but of much lighter build from the Assistant Director of the Department of Land Records and Agriculture, Bengal; this however, went to pieces within a month.

16. Rain-gauges and registers were inspected in 36 places. They were all found to have been correctly kept up, but the gauges were in most cases situated high on the top of buildings. In Rewári the gauge was badly placed near trees and was much out of shape.

Rain-gauges.

When the gauges are inspected by local officers a statement is received in my office showing the condition of the gauges and other particulars about registers, &c.

During the past year no such statements were received from the Commissioners and only twenty reports came from the District Officers. These do not represent the total inspections, as the probability is that in a number of cases the inspections are either not recorded or statements omitted to be sent.

Separate reports are received from the Irrigation Department about the condition of rain-gauges at canal stations, and these are carefully scrutinized, and where necessary the defects pointed out are removed.

17. The Reporter on Economic Products to the Government of India sent a programme of a large number of articles which were to be collected from different parts of the Punjab during the past year. Each Deputy Commissioner has been given a complete list of articles, with scientific and vernacular names, and the articles are being collected and despatched to Calcutta for the Imperial Institute. A large number of specimens in illustration of the Punjab lac work are being collected for the same Institution, but they have not as yet been sent to Calcutta.

Collection of products for Imperial Institute.

Specimens of articles of minor importance were also collected and supplied, such as *Delphinium zalil* flowers (Asbarg dye), *Chenopodium album* (Báthu), root of *Datisca cannabina*, seed and oil of *Lepidium sativum* (Halun).

Insect pests.

18. In July 1896 flights of locusts were seen in Gurgáon, Dera Gházi Khan, Ráwalpindi, Montgomery, Lahore, Simla, Muzaffargarh, Shahpur, Umballa, Delhi and Hissár, but slight damage only was done in two districts, Lahore and Shahpur. In other districts they were either destroyed or driven off by the people by alarms and beats of drums as well as smoke. No reports were received of the plague of voles or any insect pests.

Analysis of Soil.

19. Experiments as to the formation of *kankar* in saline soil continue to be made, in the Agri-Horticultural Garden, Lahore, but some years must elapse before the result is known. A cubic yard of earth was dug, and, after removing all *kankar* found there, the soil has been replaced in the hole in order to see what change it undergoes in a number of years.

With reference to Dr. Leather's report on the analysis of soils of the Hoshiárpur *chos*, the Deputy Commissioner reports that experiments made by zamíndárs in two or three villages show that a cultivated area converted by *chos* into pure sand when planted with *kharkána* (seeds) and manured with cow-dung becomes fit for cultivation within eight or ten years. But it is estimated that it will take some 50 years before it will resume its original fertility.

Bruceabad farm.

20. The usual report about this farm is annexed. The total income during the year was Rs. 7,308 against Rs. 7,821 of the preceding year. The decrease is due to the unfavorable season of the past year.

Public gardens.

21. Statements regarding the public gardens in the Delhi and Lahore districts are given in Appendix B. In the Shálamár gardens the income exceeds expenditure by Rs. 1,373. Very few new trees were planted here. The expenditure in the Shahdara gardens shows an excess of Rs. 20-8-0 over income. In the Delhi gardens 800 flowers and shrubs and 2,300 fruit trees were planted during the year.

Archæology.

22. A number of Dargai sculptures and inscribed stones were found by Major Deane in Dir and Swát and sent to the Lahore Museum.

Comparison of monthy receipts with treasury accounts.

23. Monthly statements of receipts on account of mutation and patwári fees, Agri-Horticultural Gardens and Lahore Veterinary College and expenditure on the Patwári and Kánúngo Agency are received from the Accountant-General, Punjab, and compared with the figures supplied by District and other offices. Receipts generally agree, but in a number of cases differences were detected in the amounts disbursed on account of patwárís and kánúngos' pay, and these were promptly enquired into and reconciled.

Budget and expenditure.

24. The agricultural grant for the year was Rs. 1.900, *i. e.*, Rs. 200 more than 1894-95. The expenditure was as follows :—

	Rs.
Experiments	... 383
Rain-gauges	... ...
Subscriptions	... 21
Economic products	... 169
Total ...	... 573

Civil Veterinary Department.

25. Separate reports have been submitted on the Lahore Veterinary College and on the Provincial Civil Veterinary Department. This year the latter report was written by me from the reports of the Superintendents, Civil Veterinary Department, and other material, instead of my submitting those reports *in extenso* with my review. One eminently satisfactory result of this arrangement was to reduce

the bulk of the report from 58 pages to 15 ; but of course it entailed a good deal of extra work on me. As usual the attention of the Superintendents, Civil Veterinary Department, was mainly devoted to horse-breeding, though they were able to give a little more attention than formerly to the inspection of Veterinary Dispensaries and Veterinary Assistants. I consider that it is extremely to be regretted that more is not done in the direction of cattle improvement and the treatment of cattle disease and in the supervision and instruction of the subordinate staff. I have expressed my views on this point at paragraph 11, and will not repeat them except to urge as strongly as lies in my power our duty as regards the cattle of the people. There is an immense deal which requires to be done for the improvement of the cattle of the Province and the treatment of their diseases. The people are, one and all, intensely interested in this matter and anxious for assistance. I am no opponent of horse-breeding, indeed I may claim to have made it a special study and hobby. But I cannot but recognize the fact that it is in many cases purely exotic and artificial, kept up by the personal efforts of Civil Officers and at the same time hindered by undesirable and unpopular restrictions. It is useful to the country, no doubt, but benefits *qua* the zamíndárs only a small number. Cattle-breeding and treatment is, on the other hand, of paramount importance to all, and I cannot but feel that at present we are not doing anything like what can, and should, be done to aid the people in this direction, and to make due return to the District Boards for the money they spend on Veterinary Assistants. I trust, therefore, that at the earliest possible moment a third Veterinary Surgeon to be employed in the work of cattle-breeding, treatment and the supervision and instruction of the Subordinate Veterinary Department, will be allotted to the Punjab, and placed, in reality and not in name only, at our disposal. I can honestly say that I know at this moment of no expenditure more likely to yield a good return to the people of the Province than this would result in.

Cattle-breeding and cattle disease.

During the last cold weather, Veterinary-Captain Pease, the Assistant Inspector-General, Civil Veterinary Department, has been employed in this Province in making enquiries regarding the breeds of cattle, the best means of improving them, into cattle disease, and the working of Veterinary Assistants. His most useful and interesting report was submitted by me with a brief review, with my No. 1994, dated 12th October 1896. This report brings out clearly how much might be done, had we an officer like Captain Pease at our disposal permanently for work of this kind. One important question raised by Captain Pease has been referred for opinions and will have to be dealt with by my successor. This is the practice of turning out wretched, inferior bull-calves as *pun* to prey upon the people and deteriorate their breed of cattle. The people themselves are most anxious for some solution of the difficulty which will, however, require careful handling.

Provincial horse and pony-breeding.

Provincial horse and pony-breeding has made very good progress during the year under report.

The total number of stallions at work in the Province during the year was 87 against 70 in the previous year, *i.e.*, 40 horses and 47 ponies. The number of mares covered was 5,146 against 2,909 in the previous year. The percentage of foals was 39 and the number of foals per stallion 16·23. These figures all bear testimony to the advantage of having no such harassing restrictions in regard to District Board stallions as those imposed by the brand in the case of Imperial stallions.

Mule-breeding has also made some progress, but I think myself that it is a pity for District Boards to take up mule-breeding, and that this part of the work should be left to the Imperial Department.

Subordinate Veterinary Staff.

As regards the Subordinate Veterinary Staff the Superintendent, Northern Punjab, reports great improvement; the Superintendent, Southern Punjab, does not report so favorably. Regular supervision is very urgently called for. Captain Pease gives some very interesting notes on this point in his report. The services of an extra Superintendent, as noted above, and of the 6 Veterinary graduates asked for, are very urgently required in this connection. There are now 74 Veterinary Assistants employed

in the Province capable of doing excellent work under proper supervision. They cost the District Boards Rs. 2,062 per mensem. There are also 19 Veterinary Dispensaries open, all doing good and useful work.

Lahore Veterinary College.

26. The Lahore Veterinary College has suffered a great loss in the departure of Veterinary-Captain Nunn, D. S. O., C. I. E., the late Principal, whose work was most valuable to the Institution. We have been fortunate, however, in securing the services of Veterinary-Captain Pease, under whose management further progress may be confidently anticipated.

A three years' course has been proposed for the College, and we hoped to have introduced this from October 1896, so that we might have obtained a supply of Veterinary graduates (so urgently required to supervise the Veterinary Assistants) in 1897 from the best of the students who passed last April and who would have been selected for a further year's training in English. The Government of India, however, were unable to sanction the proposal in time for this, and no Veterinary graduates can now be turned out by the Lahore Veterinary College before April 1898.

Establishment of stallion depôt in the Punjab.

27. The proposal alluded to in last year's report to establish a depôt for Imperial stallions in the Punjab is making no progress at present owing, mainly, to the opposition of the local Military authorities to the use of the site selected near Ráwalpindi.

Statistics supplied by patwáris for brood mares.

28. It is hoped that the statistics prepared by patwáris of the results of horse-breeding operations will be fairly accurate in future. I drew up detailed instructions on this point for the use of kánúngos and patwáris, which I trust will result in more reliable figures in future.

Personal Assistant and Superintendent.

29. Lála Paira Rám held charge of the office of Personal Assistant to the Director of Land Records and Agriculture throughout the year, and, as usual, rendered me the greatest assistance. Mr. P. D. Shroff, my Superintendent, also did excellent work during the year.

I have the honor to be,

SIR,

Your most obedient servant,

M. F. O'DWYER,

Director of Land Records and Agriculture, Punjab.

APPENDIX A.

Report on the working of the Bruceabad Farm for 1895-96.

Establishment.

There has been no permanent change in the establishment during the year under review, total expenditure Rs. 1,106-8-0 as against Rs. 1,111-13-6 during the previous year, the decrease being due to the stoppage of a petty sum for contingencies.

II.—Income.

Kharíf best of the three kharífs. Rabi better than rabi of 1894, shown by an increase of Rs. 606-12-2. There is decrease of Rs. 512-15-7 against rabi of 1895. Total income is as follows:—

	Rs.	a.	p.
1893-94	6,428	2	6
1894-95	7,820	11	7
1895-96	7,307	12	0

The decrease is mainly due to want of irrigation of Rakh Sohára and Rakh Ghauspur, which gave an income of Rs. 743 during the previous year. There are some other cases as well, which would tend to decrease income—

(*a*). About 5,000 kanáls of land was transferred to Bet Wagúwar as the result of the settlement operations.

(*b*). The floods were not as timely and as sufficient as could be desired.

(*c*). There was no rain to help rabi growth. It was also found that the *girdáwari* record was not quite trustworthy, and the rabi harvest was also noted to be below average by Mr. Lowis on the spot on 21st March 1896.

The prices were higher than the two previous years: wheat, the chief staple of product, was sold Rs. 3-8-0 and Rs. 2-14-0 per maund as against Rs. 2-8-0 per maund in Rabi 1895 and Rs. 1-15-0 in Rabi 1894. But for the above causes the income would have been more. *Til* harvest of the current year was not a success. Further rabi prospects are good owing to good inundation on a part of the farm.

Tenants.

It has been openly declared to the tenants that their claims to occupancy rights are baseless. There will be two classes of tenants called A and B (see Deputy Commissioner's order, dated 28th March 1896).

General.

The condition is better than the tenants in other villages. The year under report was an ordinary year. The balance realizable on the 1st October 1896 was Rs. 3,108-8-11 against Rs. 4,279-3-5 on the 1st October 1895; of this amount Rs. 2,448-14-6 have since been recovered and credited. The remaining are soon to be realized, thus leaving no arrears worth notice. The total area under cultivation was 27,869 kanáls, of which 5,428 kanáls were *kharába*.

Inquiry has shown that the *girdáwari* returns when first presented were unreliable, as the areas were in one statement given in settlement kanáls and in another in the *kacha* kanáls.

Moreover the areas are such that it is difficult to expect that the *kharába* returns will be in the least uniform, though I have warned the establishment that they are directly concerned that the patwári's work is not shirked.

The Deputy Superintendent is of opinion that it was badly done in this year.

The rate of yield, however, does not appear to be lower than that of similar land in the neighbourhood. More experiments will be carried out in the coming rabi.

C. L. DUNDAS,
Assistant Commissioner.

No. I.—Statement showing Income and Expenditure of the Bruceabad Farm for the year 1895-96.

Serial No.	Name of villages.	Realizable.			Realized.			Balance realized on 1st October 1896.
		Balance from 1895.	Demand for the year 1895-96.	Total realizable.	Credited into Treasury.	Spent directly.	Total.	
		Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
1	Bruceabad, &c.	3,579 10 2	7,307 12 0	10,887 6 2	7,287 1 3	491 12 0	7,778 13 3	3,108 8 11
2	Rakh Sohara, &c.	699 9 3	...	699 9 3	674 9 3	25 0 0	699 9 3	...
	Total	4,279 3 5	7,307 12 0	11,586 15 5	7,961 10 6	516 12 0	8,478 6 6	3,108 8 11

ASSISTANT COMMISSIONER'S OFFICE,
RAJANPUR:
Dated November 1896.

C. L. DUNDAS,
Assistant Commissioner.

No. II.—Statement showing Faslwár Demand, Realization and Balances of the Bruceabad Farm with its dependencies for three years ending Rabi 1896.

Serial No.	Name of village.	Name of harvest.	Demand. Balance.	Demand. Demand for current harvest.	Demand. Total.	Expenses. Credited into Treasury.	Expenses. Spent directly.	Expenses. Total realization.	Balance.	Remarks.
			Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A P.	Rs. A. P.	Rs. A. P.	
1	Bruceabad	Kharíf ... (Sambat 1950 / A. D. 1893)	11,455 3 3	1,109 13 11	12,565 1 2	4,828 12 8	1,401 15 2	6,230 11 10	6,334 5 4	
2	Pahárpur	Rabi ... (Sambat 1951 / A. D. 1894)	6,334 5 4	5,229 9 1	11,563 14 5	6,152 14 6	853 4 10	7,006 3 4	4,557 11 1	
3	Jágír Janúbi, Shamáli and Patti Sarkári ...	Kharíf ... (Sambat 1951 / A. D. 1894)	4,557 11 1	780 7 9	5,338 2 10	3,421 12 3	284 7 6	3,706 3 9	1,631 15 1	
		Rabi ... (Sambat 1952 / A. D. 1895)	1,631 15 1	6,297 0 8	7,928 15 9	3,867 4 7	482 1 0	4,349 5 7	3,579 10 2	
		Kharíf ... (Sambat 1952 / A. D. 1895)	3,579 10 2	1,466 14 9	5,046 8 11	2,413 10 0	491 12 0	2,905 6 0	2,141 2 11	
		Rabi ... (Sambat 1953 / A. D. 1896)	2,141 2 11	5,840 13 3	7,982 0 2	4,873 7 3	... ...	4,873 7 3	3,108 8 11	On 1st October 1896, see columns 21—23, Statement No. I.
4	Rakh Sohara and Ghauspur	Kharíf ... (Sambat 1950 / A. D. 1893)	2,403 7 7	84 3 6	2,487 11 1	2,382 12 3	...	2,382 12 3	104 14 10	
		Rabi ... (Sambat 1951 / A. D. 1894)	104 14 10	4 8 0	109 6 10	88 11 6	...	88 11 3	20 11 4	Struckable, *vide* last year's statement.
		Kharíf ... (Sambat 1951 / A. D. 1894)	...	43 9 11	43 9 11	...	...	...	43 9 11	
		Rabi ... (Sambat 1952 / A. D. 1895)	43 9 11	699 9 3	743 3 2	43 9 11	...	43 9 11	699 9 3	
		Kharíf ... (Sambat 1952 / A. D. 1895)	699 9 3	...	699 9 3	674 9 3	25 0 0	699 9 3	...	
		Rabi ... (Sambat 1953 / A. D. 1896)	...	...	...	...	...	...	...	
	Total	Kharíf	22,695 9 4	3,485 1 10	26,180 11 2	13,721 8 5	2,203 2 8	15,924 11 1	10,256 0 1	
		Rabi	10,256 0 1	18,071 8 3	28,327 8 4	15,025 15 9	1,335 5 10	16,361 5 7	11,966 2 9	See columns 21—23, Statement No. I.
	Grand Total	.....	32,951 9 5	21,556 10 1	54,508 3 6	28,747 8 2	3,538 8 6	32,286 0 8	22,222 2 10	

C. L. DUNDAS,
Assistant Commissioner.

No. III.—Statement showing the area in Kanals of villages connected with the Bruceabad Farm.

Name of villages.	Kham.						Kham.						9 Kanals 12 Marlas per acre Kham.						8 Kanals per acre Pukhta.					
	Area of last Settlement.						1893-94.						1894-95.						1895-96.					
	Area.	Ghair-mumkin.	Bhajar kadím.	Bhajar Jadíd.	Uncultivated.	Cultivated.	Area.	Ghair-mumkin.	Kadím.	Jadíd.	Uncultivated.	Cultivated.	Area.	Ghair-mumkin.	Kadím.	Jadíd.	Uncultivated.	Cultivated.	Area.	Ghair-mumkin.	Kadím.	Jadíd.	Uncultivated.	Cultivated.
Bruceabad	37,401	1,409	23,834	2,277	...	3,881	37,398	2,248	7,795	...	3,739	23,616	37,398	2,248	6,587	...	3,311	25,252	31,952	2,568	4,136	128	9,056	16,064
Pahárpur	37,565	892	29,511	503	...	6,659	21,972	199	17,758	226	1,358	2,431	22,316	199	17,758	226	1,663	2,470	31,288	7,752	296	19,760	1,632	1,848
Jágír Janúbi	8,548	405	7,675	...	...	468	8,552	406	5,978	1,045	821	302	8,552	403	5,840	1,045	469	795	6,048	624	3,896	...	1,128	400
Jágír Shumáli	1,754	108	1,233	4	...	409	1,754	108	579	216	684	167	1,754	108	891	...	510	244	1,584	136	456	8	896	88
Patti Sarkári	107,560	3,239	102,236	1,584	...	501	111,244	1,320	108,653	303	...	968	111,244	1,320	107,270	303	1,457	894	91,936	1,088	89,736	248	568	296
Rakh Sohara	26,138	136	26,002	...	...	...	26,138	136	17,555	3,284	5,163	...	26,138	126	21,234	928	528	3,312	18,672	248	9,424	1,384	7,616	...
Rakh Ghauspur ...	35,413	234	35,179	...	...	...	35,414	234	25,164	...	8,895	1,121	35,414	234	25,164	...	7,615	2,401	29,920	64	21,120	8,736	...	...
Total ...	254,379	6,423	225,670	4,368	...	11,918	242,472	4,651	183,482	5,074	20,660	28,605	242,816	4,648	184,744	2,502	15,553	35,368	211,400	12,480	129,064	12,264	20,896	18,696

C. L. DUNDAS,

Assistant Commissioner, Rájanpur.

No. IV.—Statement showing Income of the Bruceabad Farm for three years.

Serial No.	Name of village.	Name of crops.	1893-94. Income in kind.	1893-94. Cash.	1893-94. Total.	1894-95. Income in kind.	1894-95. Cash.	1894-95. Total.	1895-96. Income in kind.	1895-96. Cash.	1895-96. Total.
			Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
1	Bruceabad	Kharíf	714 0 4	365 10 0	1,079 10 4	392 3 3	201 0 3	593 3 6	876 7 9	395 7 0	1,271 14 9
		Rabi	4,343 3 10	408 14 3	4,752 2 1	4,664 2 4	683 14 6	5,348 0 10	4,425 10 8	628 7 3	5,054 1 11
2	Pahárpur	Kharíf	9 3 9	...	9 3 9	16 9 8	...	16 9 8	90 6 5	2 0 0	92 6 5
		Rabi	452 1 0	25 6 0	477 7 0	885 5 1	21 6 6	906 11 7	663 11 8	69 14 11	733 10 7
3	Rakh Tukra Jágír Shumáli and Jágír Janúbi	Kharíf	20 7 9	...	20 7 9	131 7 10	2 12 0	134 3 10	101 12 8	...	101 12 8
		Rabi	...	...	...	...	...	...	39 8 6	...	39 8 6
4	Patti Sarkári	Kharíf	0 8 1	...	0 8 1	36 6 9	...	36 6 9	0 12 11	...	0 12 11
		Rabi	...	...	...	42 4 3	...	42 4 3	13 8 3	...	13 8 3
5	Rakh Sohara	Kharíf	...	...	...	39 1 9	...	39 1 9	...	...	...
		Rabi	...	...	...	226 1 3	...	226 1 3	...	...	...
6	Rakh Ghauspur	Kharíf	84 3 6	...	84 3 6	1 8 2	3 0 0	4 8 2	...	...	...
		Rabi	4 8 0	...	4 8 0	473 8 0	...	473 8 0	...	...	...
	Total	Kharíf	828 7 5	365 10 0	1,194 1 5	617 5 5	206 12 3	824 1 8	1,069 7 9	397 7 0	1,466 14 9
		Rabi	4,799 12 10	434 4 3	5,234 1 1	6,291 4 11	705 5 0	6,996 9 11	5,142 7 1	698 6 2	5,840 13 3
		Total ...	5,628 4 3	799 14 3	6,428 2 6	6,908 10 4	912 1 3	7,820 11 7	6,211 14 10	1,095 13 2	7,307 12 0

C. L. DUNDAS,

Assistant Commissioner.

APPENDIX B—(*i*).

Statement showing Receipts and Expenditure of Shálamár and Shahdara Gardens during the year 1895-96.

Name of gardens.	Area.	Receipts.	Amount.	Expenditure.	Amount.	Existing fruit trees.	New trees planted.
	A. R. P.		Rs. A. P.		Rs. A. P.		
Shálamár	39 2 10	Actual opening balance on 1st April 1895.	38 12 5	Pay of fixed establishment ...	1,488 0 0	2,908 mangoes, 655 pomegranates, 17 peaches, 230 pears, 15 oranges, 618 lemons, 302 guavas, 64 mulberries, 302 dates, 77 loquát, 2 apple, 18 fig, and 15 grapes.	15 mangoes, 25 pears.
		Income of gardens	1,500 0 0	Water-rate	255 15 0		
		Land revenue of Bághbánpur ...	1,364 0 0	Expenditure in connection of Charágan Fair.	417 2 0		
		Rent of wooden shops at Shálamár gardens.	21 8 0	Price of gamlás for flowers ...	120 0 0		
		Fees from Shálamár Dák Bungalow.	6 0 0	Total Expenditure ...	2,281 1 0		
		Fees from Charágán Fair ...	762 6 3	Closing Balance ...	1,411 9 8		
		Total Receipts ...	3,653 14 3	GRAND TOTAL ...	3,692 10 8		
		Grand Total ...	3,692 10 8				
Shahdara	48 1 28	Actual opening balance on 1st April 1895.	811 4 4	Pay of fixed establishment ...	564 0 0	279 mangoes, 117 jáman, 114 lemon, 170 dates, 491 oranges, 1,420 pomegranates, 216 Malta oranges, 18 mulberries, 9 guavas, 7 pears.	No new trees have been planted during the year.
		Income from gardens	395 0 0	Pay of temporary establishment...	41 4 0		
		Sale proceeds of green wheat and tobacco.	116 0 0	Price of tinds	25 0 0		
		Rent of old serai given for wrestling match.	300 0 0	Price of gram and bhúsa for bullocks.	101 9 9		
		Rent of land in serái	15 0 0	Repairs to roads in gardens with brick ballast.	25 0 0		
				Other petty items	89 10 9		
				Total Expenditure ...	846 8 6		
		Total Receipts ...	826 0 0	Closing Balance ...	790 11 10		
		GRAND TOTAL ...	1,637 4 4	GRAND TOTAL ...	1,637 4 4		

LAHORE:
Dated 24th April 1896.

A. E. MARTINEAU,
Deputy Commissioner, and President, District Board.

APPENDIX B—(*ii*).

Statement showing particulars regarding Kúdsia and Roshnára Gardens for the year ending 31*st March* 1896.

Name of Gardens.	Area.	System of management.	Average annual receipts during the year ending 31st March 1896.	Average annual expenditure during the year ending 31st March 1896.	Sources from which the funds are derived.	Purposes served by the institution.	New plants introduced.		Fruit growing.	Remarks.
							Name.	Number.		
			Rs.	Rs.						
Kúdsia	67 acres	Direct management.	1,265	2,582	Municipal Funds	Pleasure Garden ...	Rose shrubs	300	Pear trees 200 Citrons 1,000	
Roshnára	158 „	...	2,411	2,280	...	Ditto ...	Ditto	500	Guavas 100 Plaintains 1,000	

DELHI MUNICIPAL OFFICE:
Dated 10*th November* 1896.

H. S. P. DAVIES, CAPTAIN,
Deputy Commissioner, 12*th November* 1897.

F. HURLEY,
Secretary, Municipal Committee.

ANNUAL REPORT

OF THE

DEPARTMENT

OF

LAND RECORDS AND AGRICULTURE,

PUNJAB,

For the year ending 30th September 1897.

Published by Authority.

H.A.1-1a

Lahore:
THE "CIVIL AND MILITARY GAZETTE" PRESS,
Contractors to the Punjab Government.

1898.

No. 31.

FROM

M. W. FENTON, ESQUIRE,

Revenue Secretary to Government,

Punjab and its Dependencies,

TO

THE SENIOR SECRETARY TO THE FINANCIAL COMMISSIONER, PUNJAB.

Dated Lahore, 1st April 1898.

File No.

Revenue and Agriculture.

Agriculture.

SIR,

I AM directed to acknowledge the receipt of your letter No. 193, dated 12th instant, submitting with the Financial Commissioner's remarks the Progress Report of the Director of Land Records and Agriculture, and in reply to say that the Report has been perused with interest by the Lieutenant-Governor and is being forwarded to the Government of India.

2. I am to request that the Report may in future be prepared in accordance with the instructions contained in the eighth of the Government of India, Agricultural Resolutions (No. $\frac{3}{39-1}$, dated 20th March 1897), copies of which have been forwarded with this office endorsement No. 26, dated 18th March 1898.

3. Captain Parsons' note on the experiments with *bind-pula* grass in checking the devastating action of hill torrents should be circulated. The experiment might be tried not only in the Siwáiks, but also in other tracts such as the slopes of the Suleman Hills, where damage is caused by hill torrents.

I have, &c.,

M. W. FENTON,

Revenue Secretary to Government, Punjab.

Punjab Government Press, Lahore—2-4-98—387.

No. 32.

FROM

M. W. FENTON, ESQUIRE,

Revenue Secretary to Government,

Punjab and its Dependencies,

TO

THE SECRETARY TO THE GOVERNMENT OF INDIA,
REVENUE AND AGRICULTURAL DEPARTMENT.

Dated Lahore, 1st April 1898.

File No.

Revenue and Agriculture.

Agriculture.

SIR,

I AM directed to submit, for the information of the Government of India, a copy of the Progress Report of the Director of Land Records and Agriculture for the year 1896-97, together with the remarks of the Financial Commissioner and the orders of this Government thereon.

2. I am to express regret that the orders of the Government of India on the subject of the form of the report, which are contained in the eighth Resolution of the Government of India in the Revenue and Agricultural Department, No. $\frac{3}{39-1}$, dated 20th March 1897, were not communicated to the Director of Land Records and Agriculture before the present Report was prepared.

3. With reference to paragraph 27 of the Report and to paragraph 2 of my letter No. 30, dated 13th April 1897, submitting last year's Report, I am to say that the question of the arrangements to be made for supervising the subordinate Veterinary Establishment and securing that the subject of cattle and cattle disease shall not, as is now the case, be practically ignored by the Civil Veterinary Department is still under consideration.

I have the honor to be,

SIR,

Your most obedient Servant,

M. W. FENTON,

Revenue Secretary to Government, Punjab.

No. 193, dated Lahore, 12th March 1898.

From—C. J. HALLIFAX, Esquire, Senior Secretary to the Financial Commissioner, Punjab,
To—The Revenue Secretary to Government, Punjab.

I AM directed to forward a letter No. 373, dated 28th February 1898, from the Director of Land Records and Agriculture, Punjab, submitting the annual Progress Report of the Department under his charge for the year 1896-97, and to convey the following remarks of the Officiating Financial Commissioner.

Sub-head No. 491.
File No. 5.

2. The Department was managed by a number of Directors during the year, *viz.*, by—

Mr. Robertson from 1st October 1896 to 31st October 1896.

Mr. G. C. Walker from 1st November 1896 to 21st December 1896.

Mr. O'Dwyer from 22nd December 1896 to 4th July 1897.

Colonel Montgomery from 5th July 1897 to 30th September 1897.

Captain Dunlop-Smith, who has written the report and is now permanent Director, took over the office after the end of the year under report, *viz.*, on 15th October 1897. But the record of tours and inspections shows that these frequent changes of Directors in no way relaxed the strictness of supervision ordinarily exercised by an all-the-year-round Director.

3. It is satisfactory to notice that the stamp of *Patwíri* is improving and that a recent change in the *Patwári* rules will render it possible to appoint good men irrespective of hereditary claims. The proposals for the funding of the *Patwári* cess referred to by the Director in paragraph 5 of his Report have not yet been submitted to Government, as they have been returned to the Director for further information and explanation. *Patwáris* and *Kánúngoes* have been called on to do much extra work during the year in connection with the famine and scarcity, and have done it well. The importance of confining District *Kánúngoes* to their proper work, the supervision of Field *Kánúngoes* is noticed in paragraph 7, sub-head District *Kánúngoes*. It is hoped that Collectors and Revenue Assistants will attend to this matter.

4. The famine and scarcity have given rise to an increase in the number of mutations entered up for attestation, and though the number of mutations actually attested has fallen on account of the other work that attesting officers have had to do, the procedure in disposing of this class of work appears to have been satisfactory. Ten Extra Náib Tahsíldárs have continued to be employed, and their employment will probably have to be permanent, especially if collateral mortgages are to be shown on the mutation records in addition to the transfers with possession that already appear in them. Indeed it is doubtful if the additional number now used will not have to be increased. The Director is understood to have this question under consideration. It is very important that mutations should be rapidly and carefully disposed of and that no Tahsíldár or Náib Tahsíldár should have more of this class of work to attend to than can be reasonably expected from him. The system of notice of transfers given by the Registration Department to the Land Revenue Record Department as a check on entries of mutations has worked satisfactorily. The abolition of the abbreviated *jamabandis* formerly prescribed was an important change, which was introduced during the year 1895-96 into the system of Land Records. The saving of time and labour which will result from this abolition will be considerable. It is hoped that with the checks that have been prescribed the mutation and crop inspection registers and *Patwáris'* diaries will afford fairly reliable evidence of changes that take place between the dates of the preparation of two successive detailed *jamábandis*. Due attention is being paid to the preparation of village and circle note books, and the resolutions of the agricultural conference are being acted on by the publication of a Reader on Land Records and the preparation of monographs; the first subject selected for the latter being "manure."

5. Crop experiments have not been very successful. As the Director of Land Records points out, they are liable to many errors and cannot be accepted without considerable correction. They are, however, useful as a guide, and the system is being improved.

6. Experiments in machinery and the cultivation of crops, trees and grasses call for no remark except in connection with the planting of the *bind-pula* as a means of checking erosion in light soils and preventing the increase of sand and damage from blowing sand-drifts. Not only is the *bind-pula* beneficial in thus preserving valuable land, but it is, at the same time, absolutely easy to propagate, and as thatching grass yields an income. Its more extended use is very desirable, but that can only be obtained if District Officers will personally take an interest in introducing and pushing the plant and so attempt to struggle against the apathy with which *zamíndárs* look upon all improvements.

7. The other subjects mentioned in the report are either dealt with elsewhere or call for no remark here, but it may not be out of place to notice the importance of strengthening the Civil Veterinary Department and especially of introducing some real check upon the work of District Veterinary Assistants, who are at present practically uncontrolled and have absolutely no influence for good with the *zamíndárs*. The subject is referred to in paragraph 27 of the Report.

Punjab Government Press, Lahore—2-4-98—387.

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American corn	*ib.*	*ib.*
Barley	*ib.*	7
Oats	*ib.*	*ib.*
Agricultural seeds	*ib.*	*ib.*
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No. 373.

FROM

CAPTAIN J. R. DUNLOP-SMITH, I.S.C.,

Director of Land Records and Agriculture, Punjab,

To

C. J. HALLIFAX, ESQUIRE, C.S.,

Senior Secretary to Financial Commissioner, Punjab.

Dated LAHORE, *the 28th February* 1898.

SIR,

Introductory.

I have the honour to submit the Annual Progress Report of the Department of Land Records and Agriculture, Punjab, for the year 1896-97. Mr. F. A. Robertson, C.S., who had held charge of the office of Director since March 1889, quitted it on the 31st October 1896. He was succeeded temporarily by Mr. G. Casson Walker, C.S., Commissioner of Excise, who held charge in addition to his other duties until he was relieved on the 22nd December by Mr. M. F. O'Dwyer, C.S. When the services of the latter officer were placed at the disposal of the Government of India he was relieved on the 5th July 1897 by Lieutenant-Colonel J. A. L. Montgomery, I.S.C., who carried on the duties of the office in addition to his own until I took over charge on the 15th October last.

Director's tours.

2. Mr. Robertson spent 8 days on tour, and travelled 187 miles by railway. Mr. Walker was in camp for 53 days and marched through the districts of Kángra, Hoshiárpur, Umballa, Ludhiána, Ferozepore and Lahore, and travelled 276 miles by railway and 355 miles by road. Mr. O'Dwyer marched under canvas through the districts of Lahore and Montgomery. He also visited Mooltan, Jhang, Gujránwála, Jhelum, Pesháwar, Ráwalpindi and Hissár. He travelled 3,388 miles by railway and 428 miles by road. Lieutenant-Colonel Montgomery spent 17 days on tour and travelled 524 miles by railway and 142 by road in the districts of Montgomery, Dera Gházi Khan and Muzaffargarh. The total distances, therefore, travelled by all the officers while holding charge of this Department were 4,375 miles by railway and 925 miles by road against 5,225 and 1,067 miles, respectively, in the previous year. The head-quarters of 16 districts and 36 tahsíls were visited against 19 districts and 44 tahsíls last year. Inspection work was thus not neglected in spite of the changes which occurred in the office.

Inspections.

3. From the inspection notes left by my predecessors it would appear that there has been no change in the nature of the inspections. The work of the patwárís and kánúngos was carefully checked, and particular attention was paid to the amount of checking and supervision exercised by the latter. From the special notes on this subject, which are given below, it will be seen that the records of the Province steadily improve.

Kánúngos' examinations.

4. The plan adopted last year of holding examinations of candidates for the post of kánúngos at one central place in each division was followed during the year under report and has proved a success. Examinations were held at the three centres of Lahore, Jhelum and Pesháwar. In all 113 examinees presented themselves, and of these 57, or 50 per cent., passed. A large proportion of the candidates were in possession of a University Entrance Examination certificate, and experience shows that in the majority of cis-Indus districts at least the supply of men qualified in this way is more than equal to the number of vacancies. But a large number of Entrance passed men appear at the examination before they have done any practical work in the field. They have invariably a good knowledge of book work, but break down in the oral part of the examination, and show themselves very ignorant

of the actual work a patwári has to do. As the rules stand at present no successful examinee is entitled to a certificate of efficiency until he has gone through two years' training as a patwári or as an assistant patwári. It would save officials much waste of time, and at the same time lessen the disappointment the better educated candidates feel when they fail if district officers would insist on their candidates going through a practical training before submitting their names for examination. The rules admit of unpassed men being appointed to existing vacancies, and there are now eleven of this class in the Province. None of them are old men. The number of unpassed men has increased since last year, chiefly owing to the creation of so many new circles on the rapidly-expanding Chenáb colony.

Patwári establishment.

5. The patwári establishment was not revised as a whole in any district, but proposals for the re-arrangement of the pay and circles of the patwáris in Dera Gházi Khán are now before the Financial Commissioner. The contribution from the Patwári Fund towards the cost of the Provincial kánúngo establishment is for the present Rs. 97,533, but owing to the low ebb of the fund in Lahore, caused by the large suspensions of revenue, the prescribed share of that district, Rs. 2,000, has been remitted temporarily. As a whole the Provincial Fund, although it has suffered from the suspensions of revenue in many districts, is in a flourishing condition. The accumulated balances at the close of the agricultural year amounted to Rs. 7,74,091, of which Rs. 2,88,931 were due on account of pay of the establishment for the previous quarter, so that the effective balance to the credit of the Fund stood at Rs. 4,85,160. There are still a number of patwáris of the lowest grade who receive less than the minimum salary laid down in No. 3 of the Patwári and Kánúngo Rules, as the state of the fund in the districts concerned does not allow of any immediate increase in their pay. Proposals have, however, been recently submitted for the consideration of Government to fund the patwári cess for the whole Province. When these are sanctioned it will be possible to raise the pay of every third grade patwári to Rs. 10 per month.

Record Offices.

6. In one district, Karnál, the records of right and other village records have been separated from the ordinary district record-room. This separation is now complete in twenty districts. Want of accommodation, or, in other words, a lack of funds, prevents this desirable reform being carried out in the remaining districts of the Province.

General results of Director's inspections.

7. The following were among the points which specially attracted the attention of the Director during the various tours of inspection :—

Standing and annual records.

Up to the agricultural year 1895-96 an annual record was prepared for every village in each district. In the case of one-quarter of the villages, which happened to come under special attestation in any given year, the annual record was a detailed one, that is, all the entries were shown in full detail. The records of the remaining three-fourths were abbreviated, only changes which had occurred during the year being shown. The total number of fields was given, but where there had been no alteration in a holding all that was done was to give a reference to the entry in the last detailed *jamabandi*. Experience showed that these abbreviated records were of very little practical use, and a proposal to do away with them altogether received the sanction of Government last year. Records are now prepared only for such estates as come under special attestation (these form, roughly, one-quarter of the total in each district) and for all villages which are subject to the fluctuating system of assessment, including those affected by the di-alluvion rules. For all the remaining villages *báchh* papers are carefully prepared, but no records are compiled. All changes of tenants, rents, &c., are noted in the harvest inspection book *(khasra girdáwari)*, and those of the nature described in Section 34 of the Land Revenue Act (XVII of 1887) are entered in the mutation register and are attested from time to time by the Revenue Officers of the tahsíl. The result of this change of system is, briefly, that the alterations previously noted in the abbreviated records are now entered in the harvest inspection book. To

prevent any tampering with the entries once made in this document the following precautionary instructions have been issued :—

(1) Where there is no change the patwári will draw diagonals from one corner to the other in the column for changes to show that at the time of field inspection the tenure of the particular field remained unaltered.

(2) A list of all changes discovered is entered in the patwárí's diary, and verified by the kánúngo.

(3) If any entry once made in the *khasra girdáwari* has to be subsequently altered, the patwári must enter it in his diary ; but no such alteration is allowed after the *báchh* papers of the harvest have been prepared.

So far as can be judged from so short an experience the rules appear to work well, but some patwárís show a tendency to over-elaboration in the entries in their diaries dealing with changes.

The detailed records attested during the year were found to have been properly attested. The field kánúngo is now bound to attest every entry in these records, holding by holding in the presence of the zamíndárs and the Tahsíldár or Náib-Tahsíldár, as the case may be, has to check personally at least 25 per cent. of the entries. The *jamabandi* work was, as a rule, done well, but the annexed statements were too frequently found to be wrong.

The covers in which the detailed records are bound are not always strong enough. They are often made of inferior leather and afford little protection to the records.

It used to be the practice in most districts to leave the copies of the settlement records *(misl bandobast)* of settlements which had expired with the patwárís. Cases occurred in which these men took advantage of apparent discrepancies in the areas of fields with both old and new numbers to foment useless litigation. As paragraph 93 of the rules under the Act provides for the storing of these documents in the district head-offices the orders of the Financial Commissioner were obtained for the collection of all such records from the patwárís. In many cases the copies have been destroyed.

Mutation work.

In some districts mutation work is still too heavy for the existing staff of officers. Ten additional Náib-Tahsíldárs were again sanctioned by Government for employment during the year under report, and their services were utilised in Lahore, Amritsar, Gurdáspur, Siálkot, Gujrát, Bannu, Dera Ismáil Khán and the different districts in the Jullundur Division. The famine of 1896-97 in part of the Province and the extreme scarcity in other parts caused an abnormal increase in the number of transfers of property, which had to be brought on the registers, and the relief afforded by the ten extra officers proved quite inadequate. Altogether 654,666 cases of transfers were attested this year, a decrease of 7,546 cases, or 1·14 per cent. less than last year's total. The average for the preceding five years is 6,60,412. Hoshiárpur headed the list with 39,249, Jhelum returned 38,077, Kángra 37,252, Ferozepore and Umballa over 34,000, Jullundur 35,883, and Bannu 31,936 ; the numbers in Ludhiána, and Amritsar were about 29,000. The year was an exceptional one, but even if this fact be discounted there can be no doubt that this part of a Revenue Officer's duties is becoming more and more burdensome.

At the Agricultural Conference held in 1896 it was suggested that all alienations of land, which had been executed and registered, should be communicated to the District authorities. With a view to giving effect to this suggestion proposals were submitted to the Financial Commissioner, who has now directed that all registration offices shall forward to the Tahsíldár a monthly list with details of all deeds professing to convey rights in land. A separate sheet is supplied for each deed, and this is sent to the patwári concerned who there and then enters the facts in the mutation register and posts a copy in some conspicuous place in the village. This new departure is most beneficial in more ways than one, and is working well.

On the whole attestation work is well done. There is a tendency on the part of some officers to refuse mutation if crops are standing on the ground when the case comes up for decision, although both parties agree that possession will change hands after the harvest. In one district a practice was discovered of striking out the names of tenants with occupancy rights on the mere report of the patwári that they had relinquished their holdings. This summary destruction of old established rights, for in many cases the mutation meant all that, was checked at once. In some cases of change in the proprietory right of an individual member of a joint holding the patwáris have taken the needless trouble to copy the details of the entire holding. The rule by which fees are to be charged for every entry made, when a transfer other than by inheritance necessitates an entry in more than one proprietory holding, has not always been followed. In one district private partitions were treated as inheritance cases, and four instead of eight annas were levied for each new holding created by the partition. In another district a Revenue Officer was found to have passed orders of rejection in the majority of cases when the parties were not present. This procedure was obviously adopted in order to reduce the pending file, and is quite irregular.

Note-books.

Both village and circle note-books continue to improve, but the work of abstracting statements from the annual records is frequently carried out in a slovenly manner. It is the special duty of the field kánúngos to see first of all that these statements are correct, and next that the information they contain is carefully transferred to the note-books. The Revenue Assistants and Tahsíldárs should be careful that the kánúngo's time is not wasted in the tahsíl. The totalling work done by the office kanúngos is gradually improving, but mistakes are still met with chiefly in the quadrennial statements. Figures dealing with suspensions and remissions are not unfrequently found to be erroneous. Very little improvement has been noticed in the Tahsíldár's remarks in part X of the note-books, and some officers leave this part blank.

In all the recently settled districts note-books with bilingual headings have been introduced. English figures giving the details since the first year of the new assessments will be copied from the old books. Bilingual note-books will be opened in the other districts when the present books have been filled up. The introduction of these note-books will save the translation in future settlements of all the statistics gathered during the term of the expiring settlement.

Registers of abstract village note-books have been distributed to every district, and these are now being filled up. Areas will be expressed in acres, and to prevent mistakes in the conversion of local measures ready reckoners have been prepared in this office.

Miscellaneous registers.

Mistakes are still frequently found in the comparison between the lambardári register and the annual records. The Patwári Fund accounts are generally well kept, but mistakes are often made in drawing up the demand. Office kánúngos generally omit to bring forward the outstanding balances of the previous years, and forget to note changes in the initial demand caused by river action. In two districts it was found that the pay of the patwáris was drawn in a lump sum, and placed in deposit elsewhere. This very irregular proceeding has been checked.

District kánúngos.

As a rule, the district kánúngos of the Province are efficient men, who both understand their work and do it, but their work is not always so carefully supervised as it might be. Their diaries should be carefully scrutinised on their return from tour by the Collector or the Revenue Assistant. The main duty of the district kánúngo is to see that the field kánúngos are doing their work properly, and their inspections should be directed to this end. But they are too often given to doing the field kánúngo's work for them and to confining their inspections to the work done by the patwáris. The work of the district kánúngo of Montgomery was found to be very unsatisfactory this year. The registers were defective and contained many unreliable details.

Field Kánúngos.

No particular improvement has been noticed in the field kánúngos as a body. These officials are now required to submit a statement showing the number of days spent in each month in each patwári's circle under their charge. This has proved to be a useful and much needed check, and in future the circles at the greatest distance from the kánúngo's head-quarters will receive more attention. Tahsíldárs are still too much given to taking field kánúngos with them on tour. During the past year both kánúngos and patwáris had a large quantity of extra work thrown upon them in connection with the famine, and this was discharged, in the great majority of cases, both cheerfully and efficiently.

Patwáris.

The work of the patwáris was actually inspected in the field by the Director in only a few cases this year, but the results were satisfactory. The majority of these officials are now capable men, and as their future prospects have improved candidates with suitable qualifications are not hard to obtain. In some districts, however, the number of candidates who have passed no educational tests is too small. The recognition of hereditary claims is the chief cause of this, but there is no reason why the majority of approved applicants should not be men who have passed the Middle School Examination.

Inspection by District Officers.

8. The tahsíl offices were found to have been regularly inspected by Deputy Commissioners and their Assistants, and the notes of the Revenue Assistants which have come to notice show that this part of their work is fully attended to.

Quarterly business statements.

9. The quarterly business statements have, as usual, been regularly submitted through the Director of Land Records and Agriculture to the Financial Commissioner. These are thoroughly examined, and during the inspections of tahsíl offices the materials from which the quarterly returns are compiled are carefully checked to see how far the latter represent actual facts. There is always a tendency on the part of the tahsíl officials to under-estimate the number of unattested mutation cases pending at the close of each quarter, but since the scrutiny of the materials on the spot has been started the chances of misrepresentation have been much reduced.

Duties of Director.

10. There has been no change in the formal duties of the Director, but he was employed during the year under report in the collection of certain statistics dealing with famine work for submission to the Government of India. He has also had to watch and record the movement of food grains in the Province, and has regularly submitted detailed reports on the fluctuations in the prices of agricultural staples within the different districts. During the famine the Station Masters of all the Railway Stations in each district sent to the Deputy Commissioners post cards every Saturday night showing the total rail-borne imports and exports of food grains during the week into and from their respective stations. On the conclusion of the famine the Government of India issued orders to discontinue this practice, but on the representation of the Punjab Government these orders were cancelled and the information is regularly supplied as before. These returns give the minimum of trouble, and the value of the information they convey both to the District authorities and to Government can hardly be exaggerated. It is to be hoped that they will never be given up, as they form one of the very few reliable guides to the state of the grain stocks in individual tracts. If the figures for the hide traffic were also included their value would be greatly enhanced.

Revision of estimates of yield of crops.

11. As usual, experiments were made in selected districts to ascertain the normal yield of the principal food crops of the Province. 1896-97 was the last year of the quinquennial period, the results of which had to be tabulated for submission to the Government of India. A copy of the return thus prepared is attached to this report as Appendix C. During the five years 682 experiments of varying value were made. In several cases, for instance, it was found that the plots selected for experiment were by no means typical examples of an average village, and sometimes the actual experiments were very carelessly carried out. Each plot, moreover, is only one-fortieth of an acre, and as it was, as a rule, selected in the middle of a large field the results however carefully evolved were apt to come out too high. Again, with the idea

of economising time and preventing leakage, the crop was usually cut, threshed, winnowed and weighed in one day, whereas in the ordinary methods followed by the majority of Punjab farmers an appreciable amount of wastage is inevitable. It was therefore found necessary in preparing the quinquennial return of average fields to reject some experiments altogether, and to modify the results brought out by others in accordance with the account given by the experimenting officers of the conditions under which the inquiries were carried out. The statistics finally entered in the return were arrived at with as much care as possible, having regard to the actual experiments made and the comments thereon of the officers responsible for them, the opinions previously recorded on the same subject by Settlement Officers in their assessment reports and the results obtained in working out the forecasts of all crops for which forecasts and estimates are periodically prepared. This scheme of systematic yearly experiments to ascertain the average yield of crops is still in its infancy and the importance of the results, both as a powerful factor in gauging the economic condition of the country and as a trustworthy guide in future re-assessment operations, is not yet fully recognised. The result is that the averages given in the quinquennial return are too much a matter of opinion and too little a representation of actual facts, but there can be no doubt that the figures which will be submitted five years hence will be much more worthy of confidence than those which have recently been furnished.

Agricultural experiments.

12. As remarked in previous reports there is no experimental farm in the Province. The reclaimed plot of *kallar* land attached to the Agri-Horticultural Gardens at Lahore was sown with gram, but owing to the excessive hot weather and the scanty rainfall this was an entire failure. Gram was the last crop that should have been tried on a sour clay soil.

Egyptian cotton.

Seeds of the 4 varieties of Egyptian cotton mentioned in previous year's report were sown in March on the dates specified against them below, giving an average outturn per acre which compares with that of the previous year as follows :—

		1896.	1895.
		lbs.	lbs.
24th March	—Egyptian—white	441½	634¾
25th „	—Hamauli	424¾	874
26th „	—Mitaffifi	441½	718
27th „	—Lord Cromer's	364¾	696 5/16

The outturn falls very short of that of the previous year and must be attributed to the very dry season and early cold weather which was unfavourable to second pickings. I doubt if the climate of Lahore is suitable for any of the Egyptian varieties, which would probably do better in the south of the Province or in Sind, where climatic conditions are more similar to those of Egypt. Lord Cromer's variety proves to be least suited to the climate of the Punjab, which is too dry and too cold for it during winter.

Wheat, Palestine.

This fine wheat, although the outturn was below that of the previous year, lost nothing in quality. It seems to be heavier in the ear than any indigenous variety.

American corn.

The outturn of all varieties of American corn was very low for the year under report. The 4 varieties mentioned in last year's report were grown, as also 15 new varieties received from America. Of these 15 varieties only one, " Early Mustodon " (a variety with very large cobs), gives some hopes of success ; the other 14 varieties were complete failures. The variety " Smedley " was sown in equal quantities on two different dates, *viz.*, 11th May and 8th June. The sowing of 11th May gave a better result than that of 8th June. The respective outturns average per acre 937 lbs. for the earlier and 672¾ lbs. for the later sowing. The average outturn per acre of the other varieties is as under:—

	1896.	1895.
	lbs.	lbs.
Yellow field	451	2,232½
White field	816	1,714
White smooth	1,060	1,290
Early mustodon	537	...

Barley.

The average outturn per acre of barley is given below ; that of the first two-named varieties was very low, only about one-half of last year's, while that of last two, considering the very unfavourable nature of the season under report, is fair :—

	1896-97.	1895-96.
	lbs.	lbs.
Barley, selected	659½	1,615
„ Government, huskless	745	1,432
„ Cape	1,636$\frac{3}{10}$	2,153
„ English Chevalier	1,862$\frac{2}{5}$	1,590

Oats.

The average outturn of the oats for the year under report is as follows :—

	lbs.
Oats, Algerian	509¼ per acre.
„ Prize Cluster	577 „

This compares very unfavourably with the previous year's results, which were not shown in last year's report, and are now given—

	lbs.
Algerian	1,587½
Prize Cluster	870¾

In 1896 only one kind was fairly successful, namely, "Algerian"; the "Tartarian" were a complete failure ; "Welcome" only gave an average of 384 lbs. per acre and "Prize Cluster" 870$\frac{3}{5}$ lbs. These varieties will not be tried again.

Agricultural seeds.

The unfavourable seasons materially affected the outturn of all agricultural seeds for the year under report. The average outturn per acre was—

	lbs.
American corn	1,058
Wheat, Palestine...	970
Barley, Cape	1,636$\frac{3}{10}$
„ Selected	659½
„ Government, huskless	745
„ English Chevalier	1,862$\frac{2}{5}$
Oats, Algerian	509¼
„ Prize Cluster	577

"Cape" and "English Chevalier" barley imported varieties were apparently benefited by the unusually severe weather. Of the Chocolate-coloured huskless barley a small plot is only grown now. This variety, though really superior in flavour and more abundant in gluten, finds little favour among the cultivators on account of its dark colour.

Thaeffe.

A plot ·103 of an acre (one kanál) was again sown with this annual Abyssinian product. Half of this area was cut thrice and produced 697 lbs. of green fodder, or an average for the season of 6,761 lbs. of fodder per acre ; the remaining half of the plot was allowed to stand for seed and produced only 10 oz., or less than half the quantity harvested in the previous year. The plant is of no use here as a food product.

Seeds harvested.

The total quantity of agricultural seeds harvested during the year under report is as follows :—

	lbs.	oz.
Wheat, Palestine	300	0
Barleys	1,189	0
American corn	5,290	0
Cotton seed	190	15
Thaeffe	0	10

Oats ... ...340 lbs. (1895-96), 224 lbs. (1896-97).

The whole of the American corn and cotton seeds, with the exception of the seeds required for garden use and 1,681 lbs. sold to private individuals, were issued to District officers, to whom wheat, barley and oats were also issued at the proper time.

Results of experiments made in various districts with agricultural seeds supplied free from the garden.

13. The abstract below shows the results of experiments made by District officers with seed distributed to them free from the garden :—

District.	Wheat.	Barley.	Oats.	Cotton.	American corn.	Remarks.
Gujránwála ...	Unsatisfactory	Unsatisfactory	Failure ...	...	...	The failures with cotton and American corn are all ascribed to want of rain and care.
Delhi ...	...	...	...	...	Unsatisfactory.	
Rohtak ...	Unsatisfactory	Unsatisfactory	...	...	...	
Karnál ...	Do. ...	Do. ...	...	Failure ...	...	
Kángra ...	Failure ...	Crop cut green	Cut green ...	...	Reports conflicting.	
Jullundur ...	Satisfactory...	Reports conflicting.	No returns received.	Failure ...	Failure ...	
Gurdáspur ...	Do. ...	...	Failure ...	...	Reports conflicting.	
Ferozepore ...	Do. ...	Satisfactory...	...	...	...	
Muzaffargarh ...	Unsatisfactory	Unsatisfactory	...	...	...	
Dera Gházi Khan	Failure ...	...	...	...	...	
Montgomery ...	Unsatisfactory	...	...	...	...	
Siálkot ...	Satisfactory...	Satisfactory ..	Fair ...	...	Failure.	
Gujrát ...	Unsatisfactory	...	...	...	...	
Ráwalpindi ...	Satisfactory...	Satisfactory...	Unsatisfactory	...	...	
Lahore ...	Failure ...	Do. ...	...	...	...	
Bannu ...	Unsatisfactory	Failure ..	Satisfactory...	...	..	
Hazára ...	...	Satisfactory...	Do. ...	...	...	
Kohát ...	...	...	Crop cut green	Reports conflicting.	...	
Hoshiárpur ...	...	...	...	...	Unsatisfactory.	
Multán ...	...	...	...	Unsatisfactory	Do.	
Pesháwar ...	...	...	...	No outturn ...	...	
Umbala ...	...	...	...	Failure ...	Satisfactory.	
Jhelum ...	...	...	...	...	Unsatisfactory.	

The results refer to the rabi crop of 1896 and the subsequent kharíf.

It will be seen that the results are generally unsatisfactory. For this no doubt the bad seasons which affected all crops unfavourably are partly to blame, but it also appears that the experiments do not receive from District officers the care and interest that is required. The seeds are sometimes overlooked till the sowing season is over, sometimes different varieties are mixed up together, or they are not sown at all, or if sown are not properly looked after. In everything connected with agricultural experiments the Punjab appears to be behind other Provinces, partly from the absence of system in carrying them out, partly from the want of suitable fields for experiment and demonstration. It is a question if any really satisfactory results will be attained till we get proper experimental and demonstration farms as in other Provinces, but meantime endeavours will be made to improve things by issuing only seeds which have been proved by repeated trials to be adapted to the Province and by giving fuller instructions as to the manner of sowing, &c.

Palestine wheat, barley and oats were also experimented upon in different districts in the rabi harvest of 1897, but owing to unfavourable climatic conditions the results were not favourable. Multán and Dera Gházi Khan, however, report that the acclimatized barley tried in those districts was superior to most of the country varieties and yielded good results. The produce was good both in quality and quantity and was saleable at higher rates than the country varieties.

English potatoes.

Experiments were again made with the seed of English potatoes in various places in the Kángra district, but the Deputy Commissioner reports that in almost all cases the seed never appeared above the ground owing to drought.

American vines.

The reports received about the experiments with vine cuttings are again unfavourable; only in Siálkot, Kohát and Montgomery are the vines reported to have borne some fruit, which was of

medium size and of good flavour. In Jhang, where the growth of the plants was satisfactory, they were all killed by the unfavourable season. There are four plants of the American variety in the Lahore gardens which promise to fruit well in the coming season.

Mahogany.

Of the 9 trees left last year in Delhi two have dried up and one has attained the height of 22 feet.

Inga Dulcis Mimoseæa.

Experiments were again made with the cuttings of this plant in a number of places in the Delhi district, where it is propagating very fairly. There are now more than 1,200 plants in that district alone. Reports from Umbála and Lahore are also encouraging. Some of the plants in Lahore bore fruit which was somewhat sweet to the taste but produced rather unpleasant effects an hour after being eaten.

Date trees.

The Director of the Botanical Department, Northern India, Saháranpur, who supplied this Province with imported varieties of date seeds and off-sets in the years 1889 to 1893, called for a report on the results obtained in the various districts in which the seeds were tried. The *précis* of district reports shows that the general results cannot be considered very satisfactory, but this seems to be due not to any fault in the seeds which germinated everywhere but to ignorance or want of care in dealing with the young plants, especially when the time came for transplanting them. In many places the transplanted seedlings withered away, which was probably due to the selection of bad soil, or an otherwise unfavourable site, or to want of irrigation and manure. The seeds sown in district or public gardens appear generally to have done better than those distributed to agriculturists. The experiment appears to have been most successful in Multán and Muzaffargarh, which are among the districts where the indigenous date palm is most successfully cultivated. The results reported from Dera Gházi Khán, Dera Ismail Khán and the Chársadda tahsíl of Pesháwar, in which localities the indigenous date also flourishes to some extent, are not so favourable, but the want of success appears in these cases to be due to carelessness or apathy in dealing with an imported variety.

In Siálkot, Multán, Jhelum and Jullundur some of the plants are reported to have borne fruit, and the samples, which were received in this office, though not ripe, appeared to be of good quality. A special report will be called for from the districts where the trees bear fruit next season to see how far the Arabian and Persian date palms are suitable for this Province.

Murram grass.

The grass supplied to certain zamíndárs in the Hoshiárpur district was planted out on embankments. It is reported to be thriving well, though in places it has dried up. In the Dasúya tahsíl the roots planted near wells and tanks are doing well and are one feet and a half high. Some roots were also planted in 1897 but the rains being unfavourable the roots dried up everywhere. The Deputy Commissioner thinks that the grass will do well if carefully looked after but not otherwise, and that it must have a full amount of moisture either from rain or from artificial irrigation.

Bindpula grass.

The beneficial results of planting *Bindpula* grass in the *chos* of the Umballa district, started by Mr. Gladstone, are undoubted. In the beginning the movement was kept alive only by that officer's great personal influence with the people, but now that many agriculturists have found that the cultivation of this grass is profitable they raise it for sale. It is most extensively grown in the Rupar subdivision.

Captain Parsons has developed Mr. Gladstone's scheme still further, and has furnished an interesting memorandum on the subject. This is printed as an Appendix D to this Report, not that this Department can claim any credit for the striking results obtained, but in order that Government may see what has been done, and that the local authorities in other districts may consider the practicability of adopting some of the suggestions in dealing with a similar set of circumstances.

Egyptian cotton.

In a memorandum respecting the growth of Egyptian cotton in India by Mr. Jamsetji N. Tata, of Bombay, it was suggested that Egyptian cotton, if tried as a rabi crop, was likely to give good results, the climatic conditions prevailing during that time in India being in his opinion, very similar to which the plant is accustomed in Egypt. To give effect to this suggestion a quantity of seed has been received from Mr. Tata, and has been distributed to various parts of the Province. The seed in Dera Gházi Khán has germinated well, and the leaves of the plant are reported to be much larger than in the case of native cotton. In Ludhiána and the Chenáb colony the plants are withering, while Multán reports that the seed sown has sprouted to the extent of one inch. No report has been received from other districts, and as the experiment really belongs to the current year the final result will be noted in the next year's report.

Supply of fruit trees from the Mahásu orchards, Simla.

14. The Punjab Government continues to contribute Rs. 1,500 to the Simla Municipality for the maintenance of the Mahásu orchards. The management of the orchards has very much improved since Captain Dunlea took charge. The number of young fruit trees placed at our disposal in the year was 5,000, the greater part of which were apples and pears. These two classes of fruit trees and cherries can only do well in the hills, so they were allotted to the districts of Simla, Kángra, Gurdáspur, Ráwalpindi and Hazára. Apricots, peaches and plums which thrive in the plains as well as in the hills were distributed to a number of plain districts also.

The orchard pupil did not go out on tour last winter as in the preceding year, but, as his visits to villages are considered useful, arrangements will be made to send him out to assist zamíndárs in pruning trees and transplanting seedlings during the current year.

The reports received from District officers regarding the trees sent to them are, on the whole, very satisfactory, and this work may be said to be decidedly successful. The District Board orchard and nursery at Sambli on the Ráwalpindi-Murree road is now thoroughly stocked with fruit trees of all kinds, and is in a most forward and satisfactory condition. Close to it there are several very suitable plots of private lands with a perennial supply of water, and the Deputy Commissioner proposes to distribute the surplus stock to the people gratis as an inducement to them to plant fruit trees. A very good crop of apples was gathered this year from the Sambli orchard, but owing to damage done by hornets and other insects, which some foresight might have prevented, the larger part of the fruit had to be plucked before it was quite ripe.

The fruit trees supplied to the Deputy Commissioner of Kángra were distributed chiefly to the Gaddís of the hills in the neighbourhood of Dharmsála, and are reported to be doing well. One of the peach trees sent to this district two years ago fruited, but the fruit failed to ripen on account of want of sun during the rains.

The trees distributed to the zamíndárs of Simla and Kot Khái were inspected by the Náib-Tahsíldárs of these two tahsíls. Two-thirds of those supplied to the Simla zamíndárs are reported to have died for want of care on their part, but the Náib-Tahsíldár of Kot Khái states that all the trees distributed there are in good condition.

Spanish chestnut.

15. The experiments made last year with this seed have not met with success, but it appears that some of the seed supplied last year got mildewed and was not fit for sowing. A fresh supply was obtained from Bushahar in the Simla district in the past year, and has been distributed for further experiments.

Agricultural implements.

16. The threshing machine supplied by Messrs. Thomson and Mylne, Behea, was tried at a fair near Lahore where thousands of people assemble from the neighbouring country. The thresher had a fair and exhaustive trial in competition with the native *phala*, and is reported to have proved unequal to the test. The machine was set up in an open space near the fair, and continued to work for full seven hours along with the

native machine. Its draught was much heavier, and the *bhúsa* chopped by it was coarse and very rough. The *phala*, which is only a wooden frame covered with sticks, costs only a few annas, and is made by the ordinary village carpenter whereas the Behea machine is difficult to mend when it once gets out of order and costs originally between Rs. 125 to Rs. 230.

Sultán water-lift.

No more experiments were made with this lift as it has already failed in this Province. The inventors, however, say that they have made some improvements in the new machine, but it has not been considered necessary to try it again in the face of the damaging results already reported.

Rain-gauges.

17. Rain-gauges and registers were inspected in 27 places. They were found to have been correctly kept up, but the gauges are very seldom found to be quite level.

During the past year statements showing the condition of the gauges and other particulars were received from the Commissioners of Jullundur, Pesháwar and the Deraját Divisions, and from Deputy Commissioners of twenty districts. There are 210 rain registering stations in the Punjab. Those under the Canal Department were all inspected, and the reports show that slight adjustment was required in some of them, but generally speaking they were found in good condition. Deputy Commissioners and their assistants sent in reports of 70 rain-gauges in all, and only one of these was said to be out of order.

Collection of products for the Imperial Institute.

18. The Reporter on Economic Products to the Government of India again sent a programme of a large number of articles which were to be collected from different parts of the Punjab during the year. Arrangements have been made to supply these articles, but these entail much labour as local names are rarely given and without them it is difficult to get people to understand what is wanted. The correspondence on this subject has already attained formidable dimensions.

Insect pests.

19. In November 1896 an insect made its appearance in part of the Jhelum district, causing great havoc among the sprouting wheat. Fields were damaged which had been sown and re-sown more than once. This insect fed on the part of the young plants above the surface of the ground, and lay hid in the soil during the day-time. Specimens were sent to the Superintendent of the Indian Museum for examination, who identified it to be a curculinied beetle belonging to the species *Tanymecus indicus*, Faust, which had previously been reported as attacking opium plants in the North-West Provinces.

Locusts.

Locusts appeared at different periods during the year in all the districts of the Delhi Division, except Gurgáon, and in Jhang, Montgomery, Lahore, Gujrát, Jhelum, Ráwalpindi, Sháhpur, Kohát, Dera Ismail Khán and Muzaffargarh, but no serious damage was done to the crops. Eggs were laid in a number of places and young ones were hatched, but prompt measures were taken to destroy them almost everywhere. In parts of Hissár the zamíndárs displayed a certain amount of passive resistance to the measures taken for the destruction of the young ones, on the ground that the locusts were sent by Providence as a sign that the famine was over.

Bone manure.

20. No experiments were made with bone dust manure in any part of the Province. The mills which were started in Lahore and Karnál for crushing bones were closed some years ago, there being no local demand for the dust. The export of bones is, however, steadily increasing. In the district of Hissár alone the export of bones, which till the famine had been a negligible quantity, averaged several thousand maunds a month during the year. No statements of the trade are received in this office, but from the price and market reports which are published by the Karáchi Chamber of Commerce, it appears that the exports of bones from that port amounted to 592,368 cwts. this year, an increase of 76,524 cwts., or 14 per cent., over the returns of 1895-96. This represented 809,088 maunds, by far the greater part of which came from the Punjab.

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Maintenance of traverse survey boundary marks.

21. The trignometrical survey marks are reported to be in fair to good condition, and the tri-junction pillars are generally in good repair. Their condition varies with the efficiency of Zaildárs and Tahsíldárs, and the supervision exercised over them. A large number of tri-junction pillars are reported to be in need of repairs in the Gujránwála district, but the Deputy Commissioner has issued instructions to put them in order. In the Montgomery and Jhelum districts arrangements have been made for marking the points of the base squares of villages with stone pillars. This has been done in most of the recently settled districts and will prove of permanent utility.

Bruceabad farm.

22. The usual report about this farm is printed as an Appendix A. The total income during the year was Rs. 12,255 against Rs. 7,308 last year. The kharíf was bad, but owing to the favourable floods in the Indus a good rabi was harvested, and this, coupled with the high prices which ruled during the year, resulted in raising the income higher than it has been since 1892-93.

Public gardens.

23. Appendix contains information regarding the progress made during the year in the public gardens situated in the Lahore and Delhi districts. The income of the Shálamár garden exceeds the expenditure by Rs. 1,121, but no new trees have been planted. Some new trees were planted in the Shádera gardens. The income of these gardens exceeded the expenditure by Rs. 64. The Delhi gardens are chiefly ornamental, and yield a trifling income, which was Rs. 3,931 less than the expenditure. Certain suggestions have been made to the Deputy Commissioner of Lahore with a view of improving the Shádera and Shálamár gardens, and considerable additions are being made to the existing number of fruit trees. Several fruit trees have been supplied to selected districts from the Government Agri-Horticultural Gardens for free distribution to zamíndárs and station gardens.

Archæology.

24. This year also the Lahore Museum has acquired some more important inscribed stones which were found in the Swát valley by Major Deane, C.S.I., Political Officer of Dir. and Swát. Discoveries of some coins were reported by Government officials to the Bengal and Bombay Asiatic Societies, who also give a share to the Lahore Museum.

Comparison of monthly receipts with the Treasury Accounts.

25. Monthly statements of accounts on account of mutation and patwári fees, the Agri-Horticultural Gardens, the Lahore Veterinary College and expenditure on the Patwári and Kánúngo Agency are received from the Accountant-General, and are compared with the figures received from the different officers, who make the payments. Discrepancies are still constantly found between the two sets of figures, but these are promptly enquired into and reconciled.

Budget and expenditure.

26. The agricultural grant for the year was Rs. 1,800, being Rs. 100 less than that for 1895-96. The expenditure was as follows :—

	Rs.
Experiments	94
Subscriptions	21
Economic products	350
Models of implements	41
Pictorial lesson sheets	796
Total ...	1,302

Civil Veterinary Department.

27. Separate reports have been submitted as usual on the Lahore Veterinary College and on the Provincial Civil Veterinary Department. As has hitherto been the case, the attention of the two Superintendents of the Civil Veterinary Department was devoted almost entirely to horse-breeding. They were able to attend to subjects connected with cattle only at odd times when they had leisure. Both of these officers, but especially the Superintendent of the South Punjab, did what they could to carry out the instructions of the Government of India Resolution of July 1893

as regards the duties of the Department in connection with cattle disease and instruction. But this practically amounted to merely testing the qualifications of, and the work done by, the Veterinary Assistants of the districts which they visited, and to inspecting the Veterinary hospitals situated within their charges. The only occasions on which outbreaks of cattle disease were personally investigated by a Superintendent were the two Amritsar cattle fairs where a few cases of rinderpest occurred. The subject was fully discussed by Veterinary Colonel Queripel and Mr. O'Dwyer, and their conclusions were reported to Government. They agreed that of the three objects for which the Civil Veterinary Department was created, horse-breeding—the imperial object—has been and must be regarded, while the Department remains so undermanned, as the primary one. The other two objects—cattle-disease and instruction in which the Provincial Government is most interested—have received, and will continue to receive, only such a limited share of attention as the Superintendents can spare from their other heavy and responsible duties. The expectations, therefore, held out when the Civil Veterinary Department was constituted have not been realised, owing not to lack of qualifications or energy on the part of the Superintendents but to the fact that their number is insufficient. The chief remedy suggested was that a third Superintendent should be appointed who would be entirely under the orders of the Local Government, and who would devote himself exclusively to the subjects connected with cattle. In the meantime efforts are being made to increase the number of Veterinary dispensaries, but nothing short of a permanent increase to the staff in the direction indicated will secure any real progress being made.

As was stated in last year's report Veterinary Captain Pease was employed during the cold weather of 1895-96 in making enquiries regarding cattle disease, the breeds of cattle, and the best means of improving them, and in checking the work of the Veterinary Assistants. His tour extended through all the districts of the Delhi Division except Hissár and Simla. During last cold weather Veterinary Captain Gunn, who had succeeded to the appointment of Assistant Inspector-General, Civil Veterinary Department, was employed in continuing this cattle survey. He visited Ludhiána, Ferozepore, Lahore, Amritsar and Jullundur, and his inspections were on the lines laid down by his predecessor. His report which contained much information and many useful suggestions affords another proof of the great necessity of having an officer with the necessary qualifications in permanent charge of this vitally important branch, if it may be so called, of the Civil Veterinary Department. It was submitted to Government along with a review by my predecessor under cover of this office No. 1815, dated 8th September 1897.

The practice of turning loose inferior bulls as *pun* followed in many districts, which was alluded to in last year's report, was taken up by Mr. O'Dwyer. After consulting various local officers Mr. O'Dwyer reported to Government that this custom to which religious sanction is now generally attached in Hindu districts, originated from a desire to really improve the breed of cattle, although it actually resulted in the majority of cases in their deterioration. He stated that castration would be widely unpopular and, in the face of Chief Court Judgment No. 34 of 1888, would probably render the operator liable to a criminal prosecution. He therefore came to the conclusion that no decisive action could be taken in the matter except where the people themselves voluntarily applied for the castration of any particular animal. The only thing to be done was to educate public opinion, chiefly through the medium of the local bodies, and at the same time to point out to the more influential members of the community the importance of arranging that the animals turned loose in this way should be really sound and useful. It would certainly not be advisable in the present state of public opinion on the subject to go any further.

Provincial horse and pony breeding.

The total number of stallions at work in the Province during the year was 99 against 87 in the previous year, *i.e.*, 47 horses and 52 ponies. The number of mares covered was 5,192 against 5,146 in the previous year. The percentage of foals was 26 and the average number of foals per stallion was 15·33 against 16·23 last year.

One donkey stallion was added during the year in Gujrát, so that the total number of donkey stallions belonging to District Boards is 7. They covered 429 mares against 498 in the previous year. The result of previous year's covering gave an average of only 17·22 foals per 100 mares covered and of 14·33 per donkey stallion. This is a falling off in last year's figures which were 27·04 and 15·75, respectively. These results are not encouraging, and both Superintendents remark that District Boards had better for the present leave this branch alone.

Subordinate Veterinary Staff.

There are now 74 Veterinary Assistants in the Province, but as remarked in last year's report there is no proper arrangement for supervising their work. On this subject the Superintendent, South Punjab, remarks as follows :—

"There is not sufficient supervision of Veterinary Assistants, and those who do supervise them know nothing of the nature of their duties. After leaving the Veterinary College, a Veterinary Assistant is, say, posted to a district; there is no one to look after him who is able to judge whether he is doing his work satisfactorily or otherwise, and there is no incentive for him to improve his Veterinary knowledge, the result being that he forgets all he was taught at the College, and lapses into native ways."

The Superintendent, North Punjab, states that the Veterinary Assistants are practically uncontrolled and can manipulate their returns with little chance of being found out.

Proposals for the appointment of a third Superintendent for supervising cattle-breeding operations and the Veterinary Assistants are under consideration, and until a third officer is given to the Province there will be little control over this body of men.

Lahore Veterinary College.

28. The Lahore Veterinary College continues to do eminently useful work, and the present Principal has maintained the high standard of efficiency to which it had been brought by Veterinary Captain Nunn, C.I.E., D.S.O. Thirty-nine students presented themselves for the final examination, of whom 28, or 72 per cent., passed successfully. The competition for entrance to the College was very keen: 175 candidates, of whom 13 had passed the Entrance Examination of the Punjab University, competed for 12 places.

Establishment of a Stallion Depôt.

29. The proposal which has been pending for nine years now to establish a depôt for Imperial stallions in the Punjab is still in an embryo stage. A site near Abbottabad has now been proposed, but there are difficulties, chiefly financial, in connection with its selection, and all that can be said at present is that the question is under consideration.

Statistics supplied by patwáris for brood mares.

30. The instructions issued for the guidance of kánúngos and patwáris in supplying statistics regarding brood mares have been fully complied with in almost every district. The result is that as far as can be judged at this stage, reliable figures have been supplied to the Civil Veterinary Department. The Superintendent, South Punjab, reports that he issued about 10,000 forms during the year, many of which have been returned to him duly filled in but that, owing to a want of sufficient clerical staff he has been unable to check them as yet.

Agricultural education.

31. The Punjab Agricultural Conference, held at Lahore in March 1896, recommended that instruction should be given in public schools in the system of land records followed in this Province. With the approval of Government a simple reader was prepared by the Personal Assistant to the Director, describing concisely the records of right and other papers prepared by patwáris according to the rules under the Land Revenue Act. This compilation has been made over to the Director of Public Instruction, who is arranging to have it translated into the vernacular and published for use in the Primary schools.

The Agricultural Conference further recommended the publication of monographs on agricultural subjects under the general supervision of the

Department of Agriculture. The subject selected for the first monograph is manure. Materials have been collected, and an officer has been selected to carry out the task.

Personal Assistant and Superintendent.

32. Lála Paira Rám held charge of the office of Personal Assistant to the Director of Land Records and Agriculture throughout the year, and my predecessors all testify to the high character of his work and the great assistance he consistently rendered. He has now occupied this position for nine years with no little profit to Government and credit to himself, and is about to return to the regular line. Mr. P. D. Shroff, Superintendent, has done excellent work. He has been Superintendent of the office since the Department was constituted in 1885, and his long and honourable service under Government will soon come to a close, as he will shortly retire on a well-earned pension. He will not be easy to replace.

I have, &c.,

J. R. DUNLOP-SMITH, CAPTAIN,
Director of Land Records and Agriculture, Punjab.

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APPENDIX A.

Report on the Bruceabad Farm for 1896-97.

I.—The Farm. The Bruceabad Farm consists of the following seven villages:—

1. Bruceabad.
2. Pahárpur.
3. Patti Sarkári.
4. Jágír Shumáli.
5. Jágír Janbui.
6. Rakh Sohaura.
7. Rakh Ghauspur.

Out of these Patti Sarkári, Rakh Sohaura and Rakh Ghauspur had no kharíf owing to deficient supply of water from the Dhundi and the Rod-i-Kohí. Rabi was only sown in Bruceabad and Pahárpur; the other villages did not get any water during the season.

The total area cultivated was 29,231 kanáls, of which 11,278 kanáls were returned as *kharába*.

Jagír Shumáli and Jágír Janúbi yielded a bumper crop of rice. The *til* crop was a failure at Bruceabad and Pahárpur.

II.—The establishment. The establishment during this year remained much the same as the year before. But the total expenditure on the farm increased from Rs. 1,106-8-0 to Rs. 1,594-5-3, the two chief items of increase being—

(*a*) Rs. 70, distributed as rewards to the establishment on the result of Kharíf 1896. A sum of Rs. 100 has also been sanctioned by the Deputy Commissioner as an additional reward for the excellent result of Rabi 1897. But as the payment has not yet been made this item will be shown next year. These rewards are a great incentive to careful work in this idle part of the country, and by making the officials directly participate in the benefit accruing to Government, it is hoped that they will in future work better for the furtherance of its interests.

(*b*) Rs. 430-5-3, paid on account of rates and cesses, to which the Bruceabad Farm has been assessed on the conclusion of the recent settlement.

III. Income.

	Rs.	a.	p.
1894-95	7,820	11	7
1895-96	7,307	12	0
1896-97	12,254	9	10

The above figures show that there was a considerable increase (about Rs. 5,000) in the income of the last year. The increase accrued both in the kharíf and the rabi harvests. The former showed an increase of Rs. 1,018, while the results obtained in Rabi 1897 were simply splendid. The total income for this harvest was Rs. 9,769-9-8 as against Rs. 5,840-13-3 of Rabi 1896, this showing a very substantial increase of Rs. 3,928-12-5. For the three preceding years the rabi income remained almost stationary, *viz.*, at Rs. 6,000, in round figures. But in 1897 it reached close upon Rs. 10,000. As regards the causes of this increase there is no doubt that the river flooding was to a certain extent more favourable than in the previous year. But the rains failed altogether, and the actual area cropped was only 13,248 kanáls as compared with 13,981 kanáls of Rabi 1896. That is to say, there was actually a decrease of 733 kanáls in cropped area during the rabi under report. Yet in spite of this decrease we had an increase of not less than 2,924 maunds in the yield of Rabi 1897. The fact is that the outturn was good and the ears of grain were quite full. Besides owing to general scarcity prices remained high throughout. The rate of first class wheat (the staple crop) rose to Rs. 4-1-6 per maund as against Rs. 3-8-0 in Rabi 1896 and Rs. 2-8-0 in Rabi 1895. The establishment also worked well under the watchful eye of a careful Tahsíldár (Bhái Hotu Singh, now Revenue Assistant), for which they received rewards as referred to above.

IV—General. (*a*). *Tenants.*—What with sickness and scarcity the condition of the tenants is anything but cheerful. Last summer they lost many bullocks from small-pox, and although Rs. 600 has been distributed among them as *takávi*, it is doubtful whether they can supplement this sum by any money of their own to replace the large number (believed to be over one hundred) of bullocks they have lost.

(b). New experiments.—The experiment of sowing wheat after dipping it in the solution of *nila-thotha* is being tried this rabi on the Bruceabad land. The seed of Egyptian cotton has also been supplied to me by the Settlement Department for experimental purposes, but the Government land on the Dhundi estate has been preferred to Bruceabad for their sowing owing to better well irrigation being available there.

(c). Prospects of the year 1897-98.—I am afraid the kharíf crops are going to disappoint us. *Másh*, the staple crop, just near maturing, has been choked by excessive dew, there being scarcely any breeze to dry it up. As for rabi sowings, though they are suffering from the cheerless condition of the tenants, yet as we have had plenty of good *sailáb* the soil is rich, and with timely rain the prospects are encouraging.

TEK CHAND,
Assistant Commissioner.

No. I.—*Statement showing Income and Expenditure of the Bruceabad Farm for the year* 1896-97.

1	2	3	4	5	6	7	8	9	10
Serial No.	Name of villages.	REALIZABLE.			REALIZED.			Balance relizable on 1st October 1897.	REMARKS.
		Balance from 1896.	Demand for the year 1896-97.	Total Realizable.	Credited into Treasury.	Spent direct.	Total.		
		Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
	Bruceabad, &c.	3,108 8 11	12,254 9 10	15,363 2 9	8,581 3 5	503 13 3	9,085 0 8	6,278 2 1	
	Rakh Sohanra	...	...	...	...	...	...	...	
	Total	3,108 8 11	12,254 9 10	15,363 2 9	8,581 3 5	503 13 3	9,085 0 8	6,278 2 1	

RAJANPUR :
The 11th November 1897.

TEK CHAND,
Assistant Commissioner.

No. II B.—Statement showing Fasalwár Demand, Realization and Balance of the Bruceabad Farm with its Dependencies for three years ending Rabi 1897.

1	2	3	4	5	6	7	8	9	10	11
			Demand.			Expenses.				
Serial No.	Name of villages.	Name of harvest.	Balance.	Demand for current harvest.	Total.	Credited into treasury.	Spent direct.	Total realizations.	Balance.	Remarks.
			Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
1	Bruceabad	Kharíf ... ... {Sambat 1951 / A. D. 1894}	4,557 11 1	780 7 9	5,338 2 10	3,421 12 3	284 7 6	3,706 3 9	1,631 15 1	
	Pahárpur	Rabi ... ... {Sambat 1952 / A. D. 1895}	1,631 15 1	6,297 0 8	7,928 15 9	3,867 4 7	482 1 0	4,349 5 7	3,579 10 2	
	Jágír Janúbi, Shamáli and Patti Sarkári ...	Kharíf ... ... {Sambat 1952 / A. D. 1895}	3,579 10 2	1,466 14 9	5,046 8 11	2,413 10 0	491 12 0	2,905 6 0	2,141 2 11	
		Rabi ... ... {Sambat 1953 / A. D. 1896}	2,141 2 11	5,840 13 3	7,982 0 2	4,873 7 3	...	4,873 7 3	3,108 8 11	
		Kharíf ... ... {Sambat 1953 / A. D. 1896}	3,108 8 11	2,485 0 2	5,593 9 1	3,479 12 11	...	3,479 12 11	2,113 12 2	
		Rabi ... ... {Sambat 1954 / A. D. 1897}	2,113 12 2	9,769 9 8	11,883 5 10	5,101 6 6	503 13 3	5,605 3 9	6,278 2 1	
	Rakh Sohaura and Ghauspur	Kharíf ... ... {Sambat 1951 / A. D. 1894}	...	43 9 11	43 9 11	...	...	...	43 9 11	
		Rabi ... ... {Sambat 1952 / A. D. 1895}	43 9 11	699 9 3	743 3 2	43 9 11	...	43 9 11	699 9 3	
		Kharíf ... ... {Sambat 1952 / A. D. 1895}	699 9 3	...	699 9 3	674 9 3	25 0 0	699 9 3	...	
		Rabi ... ... {Sambat 1953 / A. D. 1896}	...	...	...	...	...	...	...	
		Kharíf ... ... {Sambat 1953 / A. D. 1896}	...	...	...	...	...	...	...	
		Rabi ... ... {Sambat 1954 / A. D. 1897}	...	...	...	...	...	...	...	

RAJANPUR:
The 11th November 1897.

TEK CHAND,
Assistant Commissioner.

No. III.—Statement showing the area in kanáls of villages connected with the Bruceabad Farm.

Name of village.	Area of last Settlement.						1894-95.						1895-96.						1896-97.					
	Area.	Ghair mumkin.	Banjar kadím.	Banjar jadíd.	Uncultivated.	Cultivated.	Area.	Ghair mumkin.	Kadím.	Jadíd.	Uncultivated.	Cultivated.	Area.	Ghair mumkin.	Banjar kadím.	Jadíd.	Uncultivated.	Cultivated.	Area.	Ghair mumkin.	Kadím.	Jadíd.	Uncultivated.	Cultivated.
Bruceabad	32,106	2,907	4,046	128	8,961	16,064	37,398	2,248	6,587	...	3,311	25,252	31,952	2,568	4,136	128	9,056	16,064	32,106	2,907	4,046	128	9,517	15,508
Pahárpur	31,333	7,594	19,921	296	1,674	1,848	22,316	199	17,758	226	1,663	2,470	31,288	7,752	296	19,760	...	1,848	31,333	7,594	15,921	296	1,761	1,761
Jágír Janúbi... ...	6,015	596	3,893	...	1,126	400	8,552	403	5,840	1,045	469	795	6,048	624	3,896	...	1,128	400	6,015	596	3,893	...	1,135	391
Jágír Shumáli ...	1,581	135	456	12	885	93	1,754	108	891	...	510	244	1,584	136	456	8	896	88	1,581	135	456	12	685	293
Rakh Sohaura ...	18,674	249	9,423	1,388	7,614	...	26,138	126	21,234	928	528	3,312	18,672	248	9,424	1,384	7,616	...	18,674	249	9,423	1,388	7,614	...
Rakh Ghauspur ...	29,884	392	20,759	...	8,733	...	35,414	234	25,164	...	7,615	2,401	29,920	64	21,120	8,736	...	...	29,884	392	20,759	...	8,733	...
Patti Sarkári ...	91,937	1,091	89,796	250	569	231	111,244	320	107,270	303	1,457	894	91,936	1,088	89,736	248	568	296	91,937	1,091	89,796	250	800	...

TEK CHAND,

Assistant Commissioner.

Dated 11*th November* 1897.

No. IV.—Statement showing gross income of the Bruceabad Farm for three years.

1	2	3	4	5	6	7	8	9	10	11	12
			1894-95.			1895-96.			1896-1897.		
Serial No.	Names of villages.	Name of crop.	Income in kind.	Cash.	Total.	Income in kind.	Cash.	Total.	Income in kind.	Cash.	Total.
			Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Bruceabad	Kharíf	392 3 3	201 0 3	593 3 6	876 7 9	395 7 0	1,271 14 9	1,240 1 3	418 0 0	1,658 1 3
		Rabi	4,664 2 4	683 14 6	5,348 0 10	4,425 10 8	628 7 3	5,054 1 11	7,848 3 11	798 9 11	8,646 13 10
2	Pahárpur	Kharíf	16 9 8	...	16 9 8	90 6 5	2 0 0	92 6 5	197 15 4	68 8 0	266 7 4
		Rabi	885 5 1	21 6 6	906 11 7	663 11 8	69 14 11	733 10 7	1,049 15 10	72 12 0	1,122 11 10
3	Rakh Jágír Janúbi and Jágír Shumáli	Kharíf	131 7 10	2 12 0	134 3 10	101 12 8	...	101 12 8	559 3 7	1 4 0	560 7 7
		Rabi	...	...	...	39 8 6	...	39 8 6	...	...	...
4	Patti Sarkári	Kharíf	36 6 9	...	36 6 9	0 12 11	...	0 12 11	...	...	...
		Rabi	42 4 3	...	42 4 3	13 8 3	...	13 8 3	...	...	...
5	Rakh Sohaura	Kharíf	39 1 9	...	39 1 9	...	...	...	...	...	...
		Rabi	226 1 3	...	226 1 3	...	...	...	...	...	...
6	Rakh Ghauspur	Kharíf	1 8 2	3 0 0	4 8 2	...	...	...	...	...	...
		Rabi	473 8 0	...	473 8 0	...	...	...	...	...	...
		Total ...	6,908 10 4	912 1 3	7,820 11 7	6,211 14 10	1,095 13 2	7,307 12 0	10,859 7 11	1,359 1 11	12,254 9 10

RAJANPUR :
Dated 11th November 1897.

TEK CHAND,
Assistant Commissioner.

APPENDIX B—*(i)*.

Statement showing Receipts and Expenditure of Shâhlâmâr and Shahdara Gardens during the year 1896-97.

Name of Garden.	Area.	Receipts.	Amount.	Disbursements.	Amount.	Existing fruit trees.	New trees planted.
	A. R. P.		Rs. A. P.		Rs. A. P.		
Sháhlámár	39 2 10	Actual opening balance on 1st April 1896.	1,411 9 8	Pay of fixed establishment ...	1,488 0 0	2,918 mangoes, 655 pomegranates, 17 peaches, 270 pears, 15 oranges, 618 lemons, 332 guavas, 64 mulberries, 302 dates, 77 loquats, 2 apples., 18 figs and 15 grapes.	10 mangoes, 40 pears and 30 guavas.
		Income of gardens	1,250 0 0	Water-rate	256 14 0		
		Land revenue of Bághbánpur ...	1,264 0 0	Expenditure in connection with Charágán fair	536 15 5		
		Fees from Charágán fair ...	873 13 0				
		Rent from wooden shops at garden.	12 0 0	Total Expenditure ...	2,281 13 5		
		Dâk bungalow fees	3 0 0	Closing balance ...	2,532 9 3		
		Total Receipts ...	3,402 13 0				
		GRAND TOTAL ...	4,814 6 8	GRAND TOTAL ...	4,814 6 8		
Shahdara	48 1 28	Actual opening balance on 1st April 1896.	790 11 10	Pay of fixed establishment ...	563 4 0	250 mangoes, 78 jámans, 92 lemons, 219 dates, 428 oranges, 1,474 pomegranates, 200 Malta oranges, 25 mulberries, 8 guavas, 74 pears, 20 loquats, 25 figs and 37 grapes.	49 dates, 54 pomegranates 7 mulberries, 70 pears, 20 loquats, 25 figs and 37 grapes.
		Sale-proceeds of fruits from garden.	469 15 0	Gram and bhúsa for bullocks ...	150 4 3		
		Do. of green wheat ...	64 0 0	Other petty items	106 1 6		
		Rent of old serai	350 0 0				
				Total Expenditure ...	819 9 9		
		Total Receipts ...	883 15 0	Closing balance ...	855 1 1		
		GRAND TOTAL ...	1,674 10 10	GRAND TOTAL ...	1,674 10 10		

A. MEREDITH,

Deputy Commissioner, and President, District Board, Lahore.

APPENDIX B—*(ii)*.

Statement showing particulars regarding Kudsia and Roshnára Gardens called for in letter No. 1122, dated 21st July 1890, from the Director of Land Records and Agriculture, for the year ending 31st March 1897.

Name of Garden.	Area.	System of management.	Average annual receipts during the year ending 31st March 1897.	Average annual expenditure during the year ending 31st March 1897.	Services from which the funds are derived.	Purposes served by the institution.	New plants.		Fruit growing.	Remarks.
							Name.	Number.		
	Acres.		Rs.	Rs.						
Kudsia	67	Direct management.	902	2,569	Municipal Fund	Pleasure garden ...	Rose shrubs	50	Pear 125.	
Roshnára	158	Ditto ...	1,998	4,262	Ditto ...	Ditto ...	Ditto	...	Guavas ... 100 Plantains .. 300 Plum or (alúcha)... 50 450	

DELHI MUNICIPAL OFFICE:
Dated 12th November 1897.

F. HURLEY,
Secretary, Municipal Committee.

APPENDIX C.

Return showing the approximate yield per acre of the principal crops in each District of the Punjab, prescribed by Government of India Circular No. $\frac{37}{26}$, dated 27th June 1893.

No.	Names of Crops.		Average outturn in lbs. per acre cropped in the District of															
			Provincial Average.			*Hissár.*		*Rohtak.*		*Gurgáon.*		*Delhi.*		*Karnál.*		*Umballa.*	
	Ordinary name.	Botanical name.	Irrigated.	Unirrigated.	Total.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.
1	Rice	Oryza sativa	*1,167*	*266*	*775*	960	...	1,280	...	...	..	920	..	910	536	**380**	**300**
2	Wheat	Triticum sativum	*917*	*570*	*728*	582	438	1,006	576	936	594	**1,120**	**720**	838	498	**960**	**720**
3	Barley	Hordeum vulgare	*917*	*562*	*692*	480	**400**	1,000	1,000	1,200	648	960	480	854	452	...	516
4	Jowár	Sorghum vulgare	*595*	*374*	*481*	320	**260**	800	**438**	...	624	...	**400**	458	276	**480**	**400**
5	Bájra	Pennisetum typhoideum ...	*590*	*365*	*375*	**280**	**240**	320	118	...	**440**	...	360	360	232	**480**	**360**
6	Maize	Zea mays	*1,213*	*668*	*893*	...	...	...	...	...	...	...	...	934	592	**920**	**640**
7	Gram	Cicer arietinum	*755*	*522*	*549*	...	**560**	1,120	736	...	**614**	...	**800**	824	544	**640**	**600**
8	Rapeseed	Brassica campestris	*439*	*373*	*383*	334	110	...	...	...	...	...	...	520	472	**400**	**300**
9	Sugarcane	Saccharum officinarum	*1,652*	*962*	*1,484*	...	...	2,560	...	...	...	**1,600**	720	1,528	720	...	**1,440**
10	Cotton	Gossypium herbaceum	*100*	*57*	*85*	**124**	**50**	128	52	**124**	**62**	...	...	108	46	**100**	70

APPENDIX C—*continued.*

No.	Names of crops.		Average outturn in lbs. per acre cropped in the district of															
			Provincial Average.			*Simla.*		*Kángra.*		*Hoshiárpur.*		*Jullundur.*		*Ludhiána.*		*Ferozepore.*	
	Ordinary name.	Botanical name.	Irrigated.	Unirrigated.	Total.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.
1	Rice	Oryza sativa	*1,167*	*266*	*775*	...	...	1,200	800	1,000	672	...	...	466	466	...	...
2	Wheat	Triticum sativum	*917*	*576*	*728*	478	374	800	640	810	474	1,280	800	1,082	558	1,000	680
3	Barley	Hordeum vulgare	*917*	*562*	*692*	...	...	480	400	744	464	...	...	1,012	364	800	560
4	Jowár	Sorghum vulgare	*595*	*374*	*481*	...	...	...	..	..	...	...	..	...	414	640	560
5	Bájra	Pennisetum typhoideum ...	*590*	*365*	*375*	...	...	...	...	528	348	..	...	..	...	440	280
6	Maize	Zea mays	*1,213*	*668*	*893*	...	...	...	760	998	668	1,280	640	1,296	566	1,440	600
7	Gram	Cicer arietinum	*755*	*522*	*549*	...	..	...	...	822	424	1,000	720	...	388	800	560
8	Rapeseed	Brassica campestris	*439*	*373*	*383*	...	...	...	...	478	318	...	...	776	340	480	400
9	Sugarcane	Saccharum officinarum	*1,652*	*962*	*1,484*	...	...	..	...	...	...	2,000	1,600	...	...	...	...
10	Cotton	Gossypium herbaceum	*100*	*57*	*83*	...	..	..	...	192	68	150	120	144	66	...	...

APPENDIX C—*continued.*

No.	Names of crops.		Average outturn in lbs. per acre cropped in the district of																	
			Provincial Average.			*Mooltan.*		*Jhang.*		*Montgomery.*		*Lahore.*		*Amritsar.*		*Gurdáspur.*		*Siálkot.*		*Gujrát.*	
	Ordinary name.	Botanical name.	Irrigated.	Unirrigated.	Total.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.
1	Rice	Oryza sativa	*1,167*	*266*	*775*	960	...	480	480	1,040	500	1,360	500	1,360	720	1,270	752	1,440	500	1,220	...
2	Wheat	Triticum sativum	*917*	*576*	*728*	960	720	760	550	918	640	1,200	800	1,280	800	930	562	920	560	630	410
3	Barley	Hordeum vulgare	*917*	*562*	*692*	800	560	850	620	798	650	840	400	...	...	676	644	880	580	890	644
4	Jowár	Sorghum vulgare	*595*	*374*	*481*	720	...	520	400	456	480	520	320	400	320	...	...	...	320	...	488
5	Bájra	Pennisetum typhoideum ...	*590*	*365*	*375*	640	..	...	506	400	274	520	320	...	...	...	...	...	...	760	534
6	Maize	Zea mays	*1,213*	*668*	*893*	...	...	708	708	456	480	1,040	400	1,000	680	994	754	1,020	720	860	620
7	Gram	Cicer arietinum	*755*	*522*	*549*	800	440	...	472	462	406	720	600	820	640	492	550	...	...	...	606
8	Rapeseed	Brassica campestris	*439*	*373*	*383*	...	...	..	...	...	...	480	360	720	500	...	...	480	320	296	176
9	Sugarcane	Saccharum officinarum ...	*1,652*	*962*	*1,484*	...	...	Rs. 80 per acre.		Rs. 100 per acre.		1,360	500	1,600	360	1,652	1,346	1,600	1,360	1,040	788
10	Cotton	Gossypium herbaceum ...	*100*	*57*	*83*	120	60	68	42	40	38	100	56	160	90	188	50	120	70	96	46

APPENDIX C—*continued.*

No.	Names of crops.		Average outturn in lbs. per acre cropped in the district of																			
			Provincial average.			*Gujránwála.*		*Shahpur.*		*Jhelum.*		*Ráwalpindi.*		*Hazára.*		*Pesháwar.*		*Kohát.*		*Bannu.*	
	Ordinary name.	Botanical name.	Irrigated.	Unirrigated.	Total.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.
1	Rice	Oryza sativa	*1,167*	*266*	*775*	1,120	...	...	...	...	...	...	...	544	...	1,360	...	1,200	640	556	..
2	Wheat	Triticum sativum	*917*	*576*	*728*	604	314	960	720	1,070	486	...	...	574	490	920	640	790	304	720	404
3	Barley	Hordeum vulgare	*917*	*562*	*692*	640	320	...	...	...	...	880	720	928	554	1,160	600	948	222	600	400
4	Jowár	Sorghum vulgare	*595*	*374*	*481*	...	320	400	320	...	...	720	360	...	...	...	...	...	...	...	320
5	Bájra	Pennisetum typhoideum ...	*590*	*365*	*375*	..	...	760	400	796	344	440	400	878	508	440	400	258	132	...	386
6	Maize	Zea mays	*1,213*	*668*	*893*	640	...	...	...	..	..	1,000	800	1,024	592	1,560	720	1,318	396	738	...
7	Gram	Cicer arietinum	*755*	*522*	*549*	534	534	...	...	...	...	...	...	...	...	...	...	...	386	...	320
8	Rapeseed	Brassica campestris	*439*	*373*	*383*	240	184	480	360	488	314	560	480	200	220	560	320	...	...	...	...
9	Sugarcane	Saccharum officinarum ...	*1,652*	*962*	*1,484*	1,174	...	...	...	...	...	...	...	1,002	...	1,600	...	...	...	942	....
10	Cotton	Gossypium herbaceum ..	*100*	*57*	*83*	44	28	130	40	80	28	100	80	81	40	140	50	114	56	82	74

APPENDIX C—*concluded.*

No.	Names of crops.		Average outturn in lbs. per acre cropped in the district of										Remarks by Director of Land Records and Agriculture.
			Provincial Average.			*Dera Ismail Khan.*		*Dera Gházi Khan.*		*Muzaffargarh.*		
	Ordinary name.	Botanical name.	Irrigated.	Unirrigated.	Total.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	
1	Rice	Oryza sativa	*1,167*	*266*	*775*	...	...	800	...	...	...	
2	Wheat	Triticum sativum	*917*	*576*	*728*	**1,000**	**800**	454	**592**	652	526	
3	Barley	Hordeum valgare	*917*	*562*	*692*	**1,040**	**560**	800	**520**	840	700	
4	Jowár	Sorghum vulgare	*595*	*374*	*481*	560	440	600	**440**	380	320	
5	Bájra	Pennisetum typhoideum	*590*	*365*	*375*	**640**	**480**	600	**420**	420	400	
6	Maize	Zea mays	*1,213*	*668*	*893*	...	...	400	...	...	...	
7	Gram	Cicer arietinum	*755*	*522*	*549*	**800**	**600**	...	**480**	520	520	
8	Rapeseed	Brassica campestris	*439*	*373*	*385*	**560**	**480**	420	**320**	260	254	
9	Sugarcane	Saccharum officinarum	*1,652*	*962*	*1,484*	...	...	...	...	1,600	...	
10	Cotton	Gossypium herbaceum	*100*	*57*	*83*	**80**	**60**	62	**38**	70	46	

NOTE (*added in Government Secretariat*).—The figures in roman type are the same as in the provisional statement of 1892 and have been derived from Settlement and Assessment Reports. The figures in antique type represent the results of experiments conducted during the quinquennial period, but corrected where considered necessary by the Director of Land Records with reference to Settlement and Assessment Reports.

APPENDIX D.

Note on Hill Torrents and Soil Reclamation and Preservation by Captain Parsons, Deputy Commissioner, Ambala.

The damage done to the plains by the Hoshiárpur *chos* and in a less degree by the Ambala ones, and the long hesitation there has been in the adoption of the proposals made to Government long ago that the drainage basins of these *chos* inside the hills should be taken under official control for the prevention of grazing and denudation and also for the introduction of re-afforestation, induced Mr. Gladstone to set to work in a small way on his own account. As far as the water-courses rising in the Siwáliks were concerned efforts in the plains could undoubtedly only be made at the wrong end. But the process by which damaging water-spills obtain origin in the hills and eventually cut up the soil below is precisely repeated in miniature by water-spills having no origin in the hills but which spring from ravines *(darrárs)* created in exactly the same way in merely sloping country. With these cis-montane spills which spring from *darrárs* it was possible to more or less successfully struggle. The soil below the Siwáliks is sloping and very friable and not being made firm by turf and grass, it very easily cuts up under heavy rain. Where a weak place is found a breach in the soil occurs; and again these breaches are often caused by "Ambala holes." These "Ambala holes" (as they are called) are craters formed by the sudden subsidence of the upper soil owing to the under soil being gretted away by subsoil water action. Wherever these breaches are found the rain works mischief. By wash and scour the breach is enlarged till a *darrár* is formed which again often becomes a very considerable spill-channel. By this process good fields are worn away. The soil is often thrown up in different forms by the spill-channel lower down, but it is not so often improved in quality or formation. Some villages in the Ghar and Darár circles of Naráingarh suffer rather heavily from this natural process; and Mr. Douie was of opinion that the di-alluvion rules should be applied to them in an adapted form, whenever a certain percentage of the cultivated area was found to have disappeared without corresponding alluvion (see paragraph 89 of Mr. Douie's Assessment Report, Jagádhri tahsíl).

With these local water-spills and *darrárs* Mr. Gladstone attempted to teach the zamíndárs to grapple by the planting of a thatching grass (locally known as *bind-pula*) at the source of mischief. There is no doubt that his views were thoroughly sound. The planting of this grass is efficacious in two ways. Firstly, if it is planted at the head of an incipient *darrár*, it tends to prevent the *darrár* increasing, just as timber and undergrowth on the hill sides guard against *chos* by forcing rain-water to filtrate slowly instead of letting it pour down as it chooses off denuded surface land.

Again when a water-spill has been already established plantations of *bind-pula* thrown out as break-water at proper points will stop minor spates and arrest the silt brought down, thus raising the land level, reclaiming soil and often diverting the main channel where it is threatening to do more mischief.

Bind-pula shoots merely thrust into the sandiest soil in the rains strike root readily, and once established the growth becomes dense.

The zamíndárs appreciated the doctrines taught; but when they do plant out *bind-pula*, as they still do in some places, it is often more with the object of obtaining a quick harvest of easily saleable thatching grass than with the object of preserving or reclaiming land, for to look far ahead is certainly not a characteristic of the Gujar and Rájpút.

The sites of Sadhaura and Shahzádpur were both threatened with destruction by *cho* erosion. Mr. Gladstone saved the former by throwing out spurs and planting *bind-pula* freely. There is now a dense plantation where the stream washed. Shahzádpur was saved by his successor by means of similar plantations, a dam and an artificial cut for the stream to follow. This last scheme cost little though previously an estimate for the work had been fixed at many thousands of rupees.

Government is now taking the *cho* question in hand, and the protection of the Siwáliks appears likely to be soon scientifically attempted. If some subordinate could be appointed to carry this system of protection out in the *darrár* county also, much soil could be saved; for what the mischief wants is constant watching; and what the zamíndárs require is constant tutelage combined with the supervision of a ranger. The "Barrari" tract in tahsíl Shankargarh (Gurdáspur) and the Ghar and Darár tracts in Jagádhri, Naráingarh, Rúpar and Kharar yield fine examples of what rain-wash can effect on a soil not grass bound. Where the Ambala Siwáliks terminate on the left bank of the Sutlej (near the Nálágarh village of Lakhanpur) the slopes are tortured and lacerated by rain-wash to an extent of almost inconceivable intricacy.

Perhaps the most conspicuous example of the lessons taught by Mr. Gladstone is to be seen in the village of Khánpur near Kharar which has its *abádi* near a water-spill, which spill besides endangering the *abádi* created flats of sand and sand-hills which latter driven by the winds were steadily encroaching upon arable lands as such hills by constant shifting do in Hissár. Over the flats and dunes *bind-pula* was planted in the wet season and *kikar* seed was strewn. There is now a dense plantation where the river was doing damage and the water and wind action is checked. Moreover the villagers obtain a very considerable income from the sale of thatching grass and fuel, while the *abádi* also stands secure. The profits of the preserve going into the *malba* principally please the villagers ; but they do not undervalue the protective worth of the plantations.

It may be added that now that the Pípli tahsíl has been transferred to Karnál all questions relating to the canalisation of the flood waters of hill torrents have ceased to concern the district. The Chautang, Rakshi, Sarusti, Márkanda, Umla and other spills used to give the Deputy Commissioner such concern when the tracts in Pípli which receive their flood water were under his control ; but now that the Deputy Commissioner of Karnál has in his charge the whole of the low-level lands he can exclusively deal with all the canalisation questions.

REPORT

ON THE

OPERATIONS OF THE DEPARTMENT

OF

LAND RECORDS AND AGRICULTURE,

PUNJAB,

For the year ending 30th September 1898.

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1899.

BOMBAY BRANCH

OF THE

Royal Asiatic Society.

No. 28.

FROM

M. W. FENTON, ESQUIRE,

Revenue and Financial Secretary to Government,

Punjab and its Dependencies,

TO

THE SENIOR SECRETARY TO THE FINANCIAL COMMISSIONER, PUNJAB.

Dated Lahore, 28th April 1899.

Revenue and Agriculture.

Agriculture.

SIR,

WITH reference to your letter No. 258, dated the 30th of March 1899, submitting the Annual Report on the operations of the Department of Land Records and Agriculture during the year ending September 30th, 1898, I am directed to convey the following remarks and orders of His Honor the Lieutenant-Governor.

Sub-head No. 491.
File No. 5.

2. Sir Mackworth Young cannot allow to pass the remark made by Mr. Thorburn in paragraph 3 of your letter that "there is no system of agricultural education" in the Punjab. The report on this subject furnished by the Director of Public Instruction, a copy of which was forwarded to you under cover of the endorsement from this office, No. 94, dated the 10th of December 1898, shows that a beginning has been made in the matter of agricultural education, and that, what is perhaps of more importance, the education of the agriculturists has long engaged the attention of Government.

3. With regard to the promotion of Kánúngos, which is adverted to in paragraph 4 of your letter, I am to say that the subject will be noticed in the Review of the Land Revenue Administration Report.

4. With reference to paragraph 5 of your letter, I am to say that in the Lieutenant-Governor's opinion Section 45 of the Criminal Procedure Code does not impose any undue responsibility on Patwáris.

5. With reference to paragraph 39 of the Report, which deals with the communication of special information by local officers, I am to request that orders may be issued by the Financial Commissioner to district officers in the sense desired by Director of Land Records and Agriculture.

6. I am to request finally that the acknowledgments of Government may be communicated to Captain Dunlop-Smith for the energetic and efficient manner in which he has discharged his duties during the year. The report gives a useful account of the numerous duties carried out by the Department of Land Records and Agriculture and the relations of the Department to the various matters dealt with in the Government of India Agricultural Resolutions. The fulness of the description which it contains will render it unnecessary to prepare at such length future annual reports, which may be confined to an account of the progress and events of the year dealt with.

I have, &c.,

M. W. FENTON,

Rev. and Finl. Secy. to Govt., Punjab.

Punjab Government Press, Lahore—6-5-99—370.

No. 650.

FROM

CAPTAIN J. R. DUNLOP-SMITH, I. S. C.,
Director of Land Records and Agriculture, Punjab.

TO

THE SENIOR SECRETARY TO THE FINANCIAL COMMISSIONER, PUNJAB.

Dated LAHORE, *the 17th March* 1899.

SIR,

I have the honour to submit the annual progress report of this department for the year ending 30th September 1898. This is the eleventh annual report that has been furnished since the organisation of the department in 1884-85 and has for the first time been compiled in accordance with the directions of the Government of India as conveyed in their Revenue and Agriculture Department No. $\frac{3}{39\text{-}1}$ dated 20th March 1897.

I have the honour to be,
SIR,
Your most obedient servant,
J. R. DUNLOP-SMITH, CAPT.,
Director of Land Records and Agriculture, Punjab.

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ANNUAL REPORT

OF THE

DEPARTMENT

OF

LAND RECORD AND AGRICULTURE, PUNJAB.

For the year ending 30th September 1898.

CHAPTER I.

PREFATORY.

Personnel.

1. Lieutenant-Colonel J. A. L. Montgomery carried on the duties of the office of Director in addition to his own from the 1st to the 15th October 1897, on which latter date I relieved him. I have thus held charge of the appointment throughout the year with the exception of one fortnight in October. Lála Paira Rám, Extra Assistant Commissioner, who had acted continuously for nine years as Personal Assistant, returned to the regular line on the 18th April 1898 as Revenue Assistant in the Gujrát district. He was succeeded by Lála Ganga Sahái, Extra Assistant Commissioner, who was transferred to this office from the appointment of Revenue Assistant in Hoshiárpur. Mr. P. D. Shroff continued to work as Superintendent of the office. No change was made in the numbers or pay of the clerical establishment.

Tours.

2. Lieutenant-Colonel Montgomery visited 2 tahsíls of the Kángra district and I visited the head-quarters of 16 districts and 32 tahsíls. Last year 16 districts and 36 tahsíls were visited, while the annual averages during the preceding nine years are 17 districts and 34 tahsíls. During these visits the records compiled by the patwárís and different classes of kánúngos were inspected and checked. Notes of these inspections were submitted to the Financial Commissioner. Special attention was paid to the work of kánúngos and the supervision exercised by them over the work of their subordinates.

The village, circle and tahsil note-books and the new abstract village note-books were checked and mistakes and defects were pointed out in detail. As a rule these books are wonderfully accurate and the more important statements are reliable. The more common deficiencies noticed were mistakes in the statistics of wells; omission to explain marked variations of the different kinds of area or classes of soil from year to year; absence of the details of failed crops and of prices of leading staples at harvest; differences in the system of calculating the amounts of assigned revenue in the various statements dealing with these; mistakes in the columns of the revenue account return dealing with arrears and in the dates of payment of outstanding sums; inaccuracy of the return dealing with the prevailing cash and kind rents and the superficial character of the accounts of the condition of individual villages recorded by revenue officers.

Miscellaneous work.

3. I also visited the Fázilka tahsíl of the Ferozepore district in order to check the results of the survey which had been in progress some time in view of the approaching re-assessment and submitted a detailed report to the Financial Commissioner. I was appointed to serve on the Committee convened by the Government of India to consider the

future status of the Hissár Cattle Farm and spent a fortnight in this work. During May I marched through two tahsíls of Kángra proper and checked the maps prepared during the recent settlement on the system of consolidation of field numbers. The results were embodied in a report which was sent up to the Financial Commissioner.

Six examinations of candidates for the post of kánúngo were held at different centres during the year. The examiners were the Personal Assistant and myself. The following table shows the number of candidates who appeared from each district and the results :—

District.	Number of candidates.	Number successful.
Hissár	3	2
Gurgáon	3	...
Kángra	9	6
Hushiárpur	8	3
Jullundur	3	2
Ludhiána	11	4
Ferozepore	2	2
Multan	13	12
Jhang	13	10
Lahore	7	7
Amritsar...	1	1
Siálkot	8	6
Gujránwála	4	2
Sháhpur	4	3
Jhelum	13	8
Ráwalpindi	3	2
Bannu	2	1
Dera Ismáil Khán	1	...
Native States	5	3
Total	113	74

Thus approximately two-thirds of the candidates passed.

CHAPTER II.

LAND RECORD ESTABLISHMENTS.

Annual statistics.

4. Part I of the Land Revenue Administration Report of the province is compiled in this office and contains detailed statements dealing with the amount of work performed by the land records establishment during the year. The Government of India have ruled

that such statements and any reviews of them should be confined to that report and that this chapter of the departmental report should deal only with the subjects referred to in the second resolution and summarised in paragraph 5 of the eighth resolution.

Training of patwáris.

5. The unit of the land record agency is the patwári or village accountant, and almost all the huge mass of original land record work is performed by him. In the Punjab this official is in charge of a circle which as a rule contains from three to five villages. He has to collect detailed statistics of the crops of each harvest, to compile the annual revenue and rent rolls, and to survey and record the changes in all areas subject to river action or those which for other reasons are under a system of fluctuating assessment. He has to keep the field maps of his charge up to date by making the necessary amendments. He has to maintain registers in which the more important agricultural statistics are posted up from year to year, and he also keeps a diary in which are entered all occurrences affecting the revenue administration or the economic condition of his villages. He is moreover bound to furnish his superior officers with reports of calamities of season as occasion arises. All these registers, documents and reports, with the exception of the diary, are kept up separately for each village.

Candidates for the appointment of patwári in any tahsíl are as a rule selected locally from among its inhabitants by the Collector of the district. They must be able to write Urdú legibly and with facility and to work out quickly and correctly such sums in arithmetic as occur in daily work. They must be of fair physique and normal health, must have good eye-sight and their age must be between 15 and 30 years. They must bear a respectable character. These are the essential qualifications prescribed by the rules but as the general standard of education has risen since these were published, it has been found quite practicable in the majority of districts to secure a considerable proportion of young men who have passed the Middle School examination. A patwári school is opened in each district for four or five months every second or third year according to local requirements. The teacher is a specially selected field kánúngo who gives instruction in the land revenue rules, arithmetic, mensuration and surveying. Special attention is devoted to both the theory and practice of survey work. Small parties of from three to five students are organised and taken out to the fields where they have to lay squares and prepare field maps under the supervision of the instructor. Immediately before the examination a preliminary test is applied, and any candidate whose survey work is not satisfactory is not allowed to proceed further. While these schools are open they are regularly inspected by the Collector, the Revenue Assistant Collector and the district kánúngo, and at the close an examination is held. The successful candidates are then further required to undergo a training in crop inspection and in the compilation of village records. For some years past there has been an advance in the capacity and attainments of patwári candidates and to this is partly due the gradual rise in the standard of accuracy of the annual records.

No candidate is appointed to the charge of a circle until he has passed the professional examination and the number of old incumbents who have never undergone this test is steadily diminishing. In the districts which have had their assessments revised during the past twelve years the totals of such men are very small. The following table shows by districts the educational qualifications of the patwáris now in the service:—

Division.	1 District.	2 Total number of patwáris and assistant patwáris.	3 Total who have passed the Entrance Examination.	4 Total who have passed the Middle School Examination.	5 Total who have passed the Primary School Examination.	6 Total with educational qualifications. Actual.	7 Total with educational qualifications. Per cent.	8 Total with no educational qualifications.	9 Total who know only Hindí.
Delhi.	Hissár	301	1	72	145	218	72	83	...
	Rohtak	242	1	50	60	111	45	131	...
	Gurgáon	312	...	114	101	215	68	95	2
	Delhi	225	...	61	60	121	53	103	1
	Karnál	333	2	43	12	57	17	275	1
	Umbála	356	3	90	36	129	36	227	...
	Simla	8	...	2	6	8	100	...	...
	Total ...	1,777	7	432	420	859	48	914	4
Jullundur.	Kángra...	315	...	33	220	253	80	62	...
	Hushiárpur	461	11	88	358	457	99	4	...
	Jullundur	402	1	55	4	60	14	342	...
	Ludhiána	300	5	91	204	300	100	...	...
	Ferozepore	368	4	66	41	111	30	257	...
	Total ...	1,846	21	333	827	1,181	63	665	...
Lahore.	Multán	320	18	88	37	143	44	177	...
	Jhang	227	2	69	113	184	81	43	...
	Montgomery	216	2	44	148	194	89	22	...
	Lahore	328	2	91	28	121	36	207	...
	Amritsar	305	2	77	94	173	56	132	...
	Gurdáspur	426	3	61	70	134	31	292	...
	Total ...	1,822	29	430	490	949	52	873	...
Rawalpindi.	Siálkot	403	10	60	293	363	90	40	...
	Gujrát	245	2	23	38	63	26	182	...
	Gujránwála	339	3	88	49	140	41	199	...
	Sháhpur	183	3	27	40	70	38	113	...
	Jhelum	242	6	49	22	77	31	165	...
	Ráwalpindi	327	1	45	9	55	16	272	...
	Total ...	1,739	25	292	451	768	44	971	...
Peshawar.	Hazára	136	3	19	114	136	100	...	...
	Pesháwar	297	2	63	106	171	57	126	...
	Kohát	83	...	10	25	35	42	48	...
	Total ...	516	5	92	245	342	66	174	...
Derajat.	Bannu	168	...	18	12	30	18	138	...
	Dera Ismáil Khán	207	1	52	25	78	37	129	...
	Dera Gházi Khán	162	2	38	47	87	53	75	...
	Muzaffargarh	212	3	42	112	157	74	55	...
	Total ...	749	6	150	196	352	47	397	...
	Total Province	8,449	93	1,729	2,629	4,451	52	3,994	4

In the above table the figures for the Chenáb Colony have been equally divided between Jhang and Gujránwála It will be seen that more than half of the patwáris in the province have passed one or other of the examinations held by the Educational Department; 1·1 per cent. have passed the Entrance examination of the University, 20·4 the Middle School and 31·1 the Primary School examination. In Simla, Ludhiána and Hazára every patwári has passed one educational test or another and in five other districts, Hoshiárpur, Siálkot, Montgomery, Jhang and Kángra more than three-fourths of the men are similarly qualified. The districts with the smallest proportion of passed men are Jullundur, Ráwalpindi and Bannu. In the whole province there are only four patwáris who still carry on their work in Hindi and they are confined to the Delhi Division.

Claims to be admitted to the grade of patwárí on hereditary grounds have been very much weakened during the past year by an amendment of the old rule which in effect provides that for the next three years weight will be given to heredity only if the late incumbent had himself succeeded a near relative or had held the office for ten years and if no more suitable candidate is available. After the 1st January 1902 the hereditary principle will be left out of consideration altogether. Efforts are now being made every where to enlist qualified candidates from among the purely agriculturist classes and although the proportion of such men is still small these efforts have been attended with considerable success in tracts where the cultivators have realised the benefits of education. If the present policy is maintained therefore the ranks of the patwáris will be gradually filled with an increasing proportion of men possessed of the necessary educational and professional qualifications and who by descent and early associations have both a knowledge of the facts they have to deal with in their official career and a sympathy with the people amongst whom their lot is cast.

Prospects of the patwáris.

6. The position and prospects of the patwáris have not been advanced at the same uniform rate all over the province. The rates of pay of the different grades vary in different districts and their claims to a share of the clerical appointments in the general district establishment are not everywhere recognised so fully as they might be. At the close of settlement operations in a district advantage has always been taken of the revision of the cesses to re-adjust the grades and the salaries attached to them but the process has been necessarily slow. Lately however in connection with the proposed provincialization of the Patwári Fund proposals have been submitted for the adoption of three grades in every district paid respectively at Rs. 14, Rs. 12 and Rs. 10 per month. The scheme also includes a provision for the appointment of a certain number of assistants on Rs. 8 a month. If these proposals are sanctioned the grievances which at present find expression in some districts will be removed.

Two-thirds of the vacancies among the kánúngos must be filled by promoted patwáris and the Revenue Circulars prescribe that the posts of Tahsíl Wásil Báki Navís and Siáha Navís shall generally be reserved for them. They have at present more than their allotted share of kánúngo appointments in every district but one but this inequality is becoming less every year and will soon disappear altogether. The orders regarding the other two appointments are not always acted upon and only isolated cases occur where a patwári is given promotion to a vacancy among the vernacular clerks of a district.

Training of kánúngos.

7. The next link in the chain of the land-record agency is the kánúngo or supervisor of the patwáris. There are 686 kánúngos in the Punjab and these are divided into three classes. The first who is known as field kánúngo is peripatetic and is in charge of from fifteen to twenty patwáris' circles. The second, called the tahsíl office kánúngo, is sedentary and is entrusted with the collation of the various returns and reports submitted by the patwáris. The third is the district kánúngo who superintends the work of both the field and office kánúngos. The duties performed by these three classes are those which are briefly summarised in paragraph 10 of the resolution.

The Kánúngo Staff is recruited from the ranks of the patwáris and by selected men who have passed at least the Entrance examination, two out of every three appointments going to the former. The recruitment is under the direct control of the Deputy Commissioner. Owing to the absence of an experimental farm there is no special institution as in the case of the patwáris for the imparting of technical professional instruction. The Director of Land Records and Agriculture holds three or four examinations of kánúngo candidates at convenient centres during the year. They are examined orally as well as by written papers in the rules under the Land Revenue Act, arithmetic, mensuration, principles of surveying, dictation and hand-writing. But certificates of efficiency are not granted to the men who pass until the Deputy Commissioner of the district to which they belong certifies that they have undergone a two years' course of practical training in the work of a patwári. Each district moreover is authorised to depute two candidates every year for special training in some other district where settlement operations are in progress. The result of these precautions is that before the great majority of candidates are placed even in officiating charge of a circle they must have acquired considerable experience in the field and the examination by the Director which has lately become stiffer than before ensures that they have sufficient book knowledge. The constitution of the present kánúngo staff in each district and division is given below.

1	2	3	4	5	6	7	8
Division.	District.	Total number of kánúngos.	Direct appointments.		Promoted patwaris.		Number who have not passed Directors' Examination.
			Actual.	Per cent.	Actual.	Per cent.	
Delhi.	Hissár ...	21	...	...	21	100	...
	Rohtak ...	16	...	...	16	100	...
	Gurgáon ...	21	4	19	17	81	1
	Delhi	15	...	...	15	100	...
	Karnál	21	...	...	21	100	...
	Umbála ...	22	1	4	21	96	...
	Simla	1	...	...	1	100	...
	Total ...	117	5	4	112	96	1
Jullundur.	Kángra ...	24	5	21	19	79	...
	Hushiárpur ...	26	3	12	23	88	...
	Jullundur ...	20	2	10	18	90	...
	Ludhiána ...	20	4	20	16	80	...
	Ferozepore ...	23	2	9	21	91	...
	Total ...	113	16	15	97	85	...
Lahore.	Multán	22	1	4	21	96	...
	Jhang	22	5	23	17	77	...
	Montgomery ...	17	4	24	13	76	...
	Lahore	20	1	5	19	95	...
	Amritsar ...	16	1	7	15	93	...
	Gurdáspur ...	24	2	9	22	91	...
	Total ...	121	14	12	107	88	...
Rawalpindi.	Siálkot ...	25	6	24	19	76	...
	Gujrát	15	3	20	12	80	...
	Gujránwála ...	26	3	12	23	88	...
	Sháhpur ...	13	4	31	9	69	...
	Jhelum	71	2	3	69	97	...
	Ráwalpindi ...	24	1	4	23	96	1
	Total ...	174	19	11	155	89	1
Peshawar.	Hazára ...	13	...	...	13	100	...
	Pesháwar ...	24	5	21	19	79	...
	Kohát... ...	10	...	...	10	100	...
	Total ...	47	5	11	42	89	...
Derajat.	Bannu	16	3	19	13	81	...
	Dera Ismaíl Khán ...	66	29	44	37	56	2
	Dera Ghází Khán ...	15	1	7	14	93	...
	Muzaffargarh	17	2	12	15	88	2
	Total ...	114	35	31	79	69	4
	Province ...	686	94	14	592	86	6

In seven districts the kánúngos have all been promoted patwáris and Dera Ismáil Khán is the only district where the prescribed standard—one-third—of Entrance-passed men has been attained. Sháhpur, Montgomery and Siálkot come next. Over the province as a whole only 14 per cent. of the appointments are held by men with superior educational qualifications, but this percentage will gradually increase and in a few years the proper balance will be effected in most districts. It is satisfactory to note that only six men out of the whole establishment have not passed the professional test. Two of these moreover are in Muzaffargarh and two others in Dera Ismail Khan, where settlement operations are now in progress, so it may be assumed that they are all four efficient.

In paragraph 11, the Government of India insist on the confinement of the kánúngos to their proper functions. This point is emphasised also in the rules under the Land Revenue Act. The duties of the field kánúngo have been considered so important in this province that he is expressly exempted from attendance on the Tahsíldár or other revenue officer when the latter enters his circle. The only official he is required to accompany on tour is the district kánúngo, and only when no harvest inspection is going on. Owing chiefly no doubt to the fact that during recent years the work of all local officers has largely increased without any corresponding expansion of the staff great difficulty has been experienced in adhering strictly to this rule. The tours of the field kánúngos too often coincide with those of the tahsíl revenue officers. This means in effect that the kánúngo has no opportunity of inspecting a patwárí's work when the latter is engaged with the Tahsíldár and even when the patwári is set free the kánúngo is called upon to help in mutation work or even miscellaneous administrative business. When his tours are disturbed in this way it is impossible for him to economise his time and maintain a thorough and systematic supervision of his charge. In a similar way the sedentary or office kánúngo is not unfrequently called on to help the officers at tahsíl head-quarters. He is almost invariably the most capable and experienced man available, and the temptation to call upon him for assistance in a difficult revenue case or in the preparation of a lengthy report is often irresistible. The most effectual way to counteract these tendencies would be to revise the existing establishments and in connection with the present inquiry ordered by the Financial Commissioner into over-work in tahsíls something may be done in this direction. But District Officers have it in their power to reduce the extent of their operation even under existing conditions.

Training in surveying.

8. In paragraph 12 attention is drawn to the importance of the proper instruction of the supervising staff in surveying so that they may be able to turn out work which will be accepted by the professional surveyors as sufficiently accurate for their purposes. As settlement operations are constantly in progress in from 5 to 7 districts and as annual re-measurements on the square system of all changes due to river action are being gradually introduced everywhere it may safely be assumed that practically all the kánúngos are sufficiently trained in survey. In 18 out of 31 districts the field kánúngos have either passed through a settlement or have been subjected to a two years' training in survey before appointment, and in the remaining districts the small minority of older men with no practical experience of modern methods will disappear altogether in time. In recent periodical inspections of districts not under settlement I have been struck with the accuracy and neatness of the survey work carried out by the non-professional record agency. For many years to come at least I do not think that there is any fear of a decline in the kánúngos' knowledge of survey work or in their practical acquaintance with it.

Prospects of the kánúngo staff.

9. The concluding paragraphs of the second resolution insist on the necessity of providing for a free flow of promotion from the ranks of the kánúngos into the regular line. Although the Punjab is quoted as a province where such a system has been attended with marked success I do not think it can be held that it has been developed to anything like the extent which it is both possible and desirable to reach. A kánúngo receives on first appointment Rs. 20 per month and after he has passed the examination and obtained a certificate of efficiency he is promoted to Rs. 25.

The next step is the Rs. 30 grade but only one-fourth of the whole kánúngo establishment are paid at this rate. In addition to their regular pay half the field kánúngos draw a field allowance of Rs. 10 or Rs. 5 per month. These allowances are awarded at the discretion of the Deputy Commissioner twice a year on a review of the work done in the previous six months. As a rule the majority of these allowances are drawn by the senior men. When care is taken with the award these allowances are an efficacious means of rewarding good work. The one drawback in connection with them is that the sedentary or office kánúngos are given no share. It is true that these men have not to keep up a horse but their duties are both responsible and heavy. If a field kánúngo sends up bad work it may be corrected in the tahsíl and even if this is not done only a small part of the tahsíl is affected. But an inefficient office kánúngo may confuse the whole of the revenue returns of a tahsíl. A separate reference on this subject will be made to the Financial Commissioner. The next appointment open to both peripatetic and sedentary kánúngos is that of district kánúngo to which a monthly salary of Rs. 60 is attached. The kánúngos are also understood to have a claim on the post of district revenue accountant (*Wásil Baqi Navís*) but this is not always recognised. These two appointments moreover are so limited in number that vacancies seldom occur.

The right of the kanúngo staff to promotion within the limits sketched above is recognised and given effect to everywhere. But there are other avenues of advancement which have been authoritatively declared to be open to them as well as to men serving in other branches or departments of the service. A field kanúngo who has been five years in the service is eligible for the post of Naib-Tahsíldár. But such promotions have not been common in the past and until a fixed number of appointments are reserved in each division and the names of approved men are duly registered the wishes of Government will not be fully carried out. The number of promotions during 1897-98 was as follows :—

District.	Naib-Tahsildar.		Deputy Superintendent of Settlement.
	Permanent.	Temporary.	
Delhi	...	1	...
Kángra	1	...	...
Hushiárpur	...	...	1
Ludhiána	...	1	...
Ferozepore	...	2	...
Montgomery	...	...	1
Amritsar	...	...	1
Siálkot	...	2	...
Gujránwála	...	...	1
Jhelúm	...	2	...
Hazára	...	1	...
Total Province	1	9	4

No promotions were given in any other district. Of the 14 men 10 were field and 4 were office kanúngos. Statistics showing the number of vacancies among the Naib-Tahsíldárs and Deputy Superintendents are not available but they must have been exceptionally large during the past year owing to the demand for plague officers. There are 686 kánúngos in the province so that only 2 per cent. obtained promotion.

A district kanúngo of over three years approved service as such may be selected as a Tahsíldár but such selections are very rare.

Under the rules for the appointment to the superior revenue establishment of the Irrigation Department one vacancy out of five among the Náib-zilladárs has to be given to kanúngos. In the past five years the names of 30 kánúngos have been sent in by Deputy Commissioners or Commissioner for these appointments but no appointment has been made. This rule therefore is practically a dead letter.

There can be no question that, as pointed out in paragraph 13, the absence of kánúngos from head-quarters and the few opportunities they have of coming into contact with the officers in whose hands promotion lies have continued to disappoint their legitimate expectations. The real remedy will be to direct that the promotion of the kánúngo staff be obligatory and not permissive. I would further suggest that a certain proportion of district appointments such as record-keeper, excise dárogha, statistical clerk, income-tax clerk, revenue clerk, reader and so on might with advantage be reserved for efficient kánúngos. It is very necessary that the readers and clerks in the courts of the Revenue Assistant and Tahsíldár should be men who have had experience in the field and who have themselves done original work. They will be able to render their officers intelligent assistance and from their familiarity with village life and their experience of the needs and aspirations of the people they will contribute much more effectually to the smooth working of the administration than any town bred clerk.

CHAPTER III.

UTILISATION OF LAND RECORDS.

Statistical note-books.

10. The third resolution deals exclusively with the use of the facts and statistics obtainable from the land records as a means of collecting agricultural information and framing measures for the development of the resources of the country. The chief objects therefore which have hitherto been served by our land record system will not be discussed in this chapter. The facts and statistics are brought together for villages and groups of villages in a series of note-books. Every patwári has to keep for each village in his charge a register or note-book showing details of its area, crops, revenue, tenures and agricultural resources. Similar compilations are maintained by the office kánúngo for each village and assessment circle and for the tahsíl as a whole, while the district kánúngo has to keep up duplicate registers of assessment circles and tahsíls as well as a note-book for the district. The patwári obtains his material from the annual records and sends copies to the office kánúngo who, after posting up the circle and tahsíl registers for which he is responsible, submits copies to the district kánúngo who is then in a position to prepare the district register.

Besides these note-books which contain in detail the various statistics classified under different heads and arranged in a regular series of tabular statements there is another set of abstract village note-books usually known as *pargana* books. These will be described later on. They are kept up by the office kánúngo and are taken about by the superior revenue authorities when on tour in the tahsíl with which they deal.

With the exception of the village note-books kept by the patwáris in the vernacular both these sets of note-books have bilingual headings and the statistics are entered in English numerals. The systems on which they are arranged are well understood by those who are responsible for keeping them up to date and as a rule they are carefully and accurately compiled. Since I took charge of this office I have inspected the books at the head-quarters of 25 districts and 56 tahsíls and have met with only isolated instances

of serious inaccuracy. No regular provision however has been made as yet for their systematic inspection. Each inspecting Officer of whatever rank is left to follow any methods which happen to suggest themselves to his particular mind. The result is, to take one example, that no serious attempt has yet been made to explain annual fluctuations in any given set of statistics or to review their history during a period of years with the object of ascertaining what factors are influencing agricultural conditions, their general effect, and how they can best be controlled and modified if necessary. Hitherto the note-books have been of the greatest possible service to settlement officials and to both tahsíl and district Officers in the ordinary work of the administration. The information they contain is drawn upon almost daily by local officers in dealing with the many questions affecting the tracts and people committed to their charge, and in times of exceptional scarcity or on occasions when some important problem affecting large numbers of the agricultural population have to be solved—such as the supply of transport for military operations or the selection of peasants for the new canal colonies—they have been of incalculable value. It is not too much to say that had it not been for the assistance afforded by these registers in the late famine the schemes of suspension and remission would have been neither thorough nor impartial in their working and the other measures of relief would have been of much less effect.

District analysis of note-books.

11. The Government of India however now contemplate an extension of the sphere of utility of the circle registers in the direction of what is termed "district analysis." To this end a scheme has to be worked out for localising defects, discovering their cause and finally devising some means for their removal. Such a scheme must provide for the supply by the kánúngo agency of such information regarding the facts brought out by the statistics compiled under their supervision as their superior officers may require and for the analysis of this material by the latter with a view to remedial action. It will also not be confined to a general inquiry once and for all into the conditions and resources of a district, but must be constant in action so that the land records may be regularly utilised for the gradual attainment of the "highest standard" of agricultural efficiency. This it is explained can best be done by prosecuting investigations under three heads which will now be separately discussed.

Occasional failure.

12. Reports of all unforeseen calamities such as failure of rain, hail-storms, &c., are invariably entered in their diaries by the patwáris and then submitted through the field kánúngos to the Tahsíldár, who in his turn forwards them to the Deputy Commissioner with suggestions as to such action as may be called for under the circumstances. In exceptional cases also the various officials attached to tahsíls and districts furnish special reports. The authorities have also at their disposal valuable sources of information in the daily rainfall returns, the weekly telegraphic crop and weather summaries and the monthly reports of agicultural prospects. Thus under existing arrangements in this province the responsible authorities are promptly and regularly supplied with all necessary information and no suggestions appear to be required for making improvements under this head.

Gradual failure.

13. The Government of India have pointed out that in almost every province the land records provide all the information necessary for indicating the gradual deterioration of any tract but until quite recently this information was contained in scattered forms drawn up in troublesome detail. Provision therefore was made for the supply of a clear and simple abstract of the contents of these forms in the shape of the abstract village note-books referred to in the beginning of this chapter. These have now been introduced in the Punjab. They are arranged by villages and as a rule each volume contains all the villages of one assessment circle. There is one large statement for every village with various headings under which are grouped together the chief statistics dispersed throughout the various tables in the ordinary village note-books. This comprehensive statement which contains sufficient space for the entries of twenty years is followed in the case of each village by a few blank sheets for the insertion of remarks from time to time by the Deputy Commissioner and his assistants. A map of the circle containing topographical details accompanies each volume. The tables are

arranged so as to show at a glance the advance or decline in the prosperity of any village. The books are kept up by the office kánúngo and are taken about by the superior revenue authorities when on tour in the tracts to which they belong. As entries had to be made in these books for every year since 1885-86 extra establishment to help in their compilation was engaged in most districts, but the expenditure involved was very trifling and in future office kánúngos will have no difficulty in keeping them up to date. The majority have now been completed and the remainder are well in hand. As yet Collectors and their assistants have had no opportunity of using them, but they will be available during the current year and in the next departmental report the extent to which they have been taken advantage of will be described. The instructions of Government as to the duty of the Director of Land Records to see that "the circle books are punctually and intelligently examined in every disrict" will not be lost sight of. During the year under report the operations of this department were necessarily confined to seeing that they were being accurately compiled on the prescribed system. Proposals will now he submitted to the Financial Commissioner in order that the instructions as to the communication by District Officers to this department of the proved existence of any serious agricultural deterioration may be carried out.

Persistent failure.

14. The machinery for an enquiry into causes and defects of a more or less persistent character which require prolonged investigation such as frequent liability to failure of rain, insufficiency of wood supply, diseases of cattle and plants, want of drainage and so on is available to only a very limited extent in this province at present. Such investigation can most profitably be carried on by experts who have at their disposal and under their control a convenient field for observation and experiment. The inquiry moreover which, according to paragraph 7, has to be carried on by the Director of the Agricultural Department on the basis of the land records involves to a considerable extent the assistance of experts before it can have any practical results and as admitted by the Government of India it must extend over periods of many years. When a third Superintendent is attached to the Provincial Civil Veterinary Department it is hoped that some thing will be done towards improving the condition of cattle and restricting the diseases to which they are subject. In the meantime, in the absence of experts and of an agricultural farm, the operations of this department on the lines indicated by the Government of India under this particular head must be largely devoted to an endeavour to provide by a modification of part of our system of land records material for investigation rather than to an attempt to attain its objects independently. Towards this end the directions already published for the proper inspection of land records will have to be supplemented by the issue of further instructions to Tahsíldárs and Revenue Assistants to draw up once for all a summary of the conditions and resources of the tracts in their charge, and thereafter to carefully observe fluctuations in the statistics from year to year with the help of their own local knowledge and the results of further inquiry where necessary. Some system of this character will in time furnish a continuous record of facts and their causes which will prove of service. As the circumstances of different tracts vary only general instructions will be called for and draft proposals will be duly submitted to the Financial Commissioner for sanction. If properly framed they should result in making the diaries of tahsil officials, district kánúngos and of junior gazetted officers much more useful and interesting than they are at present.

CHAPTER IV.

SCIENTIFIC AND NATIONAL ENQUIRY UNDER IMPERIAL DIRECTION.

Enquiry by Imperial Departments.

15. The national scheme of agricultural inquiry as defined in the opening paragraph of the fourth Resolution embraces eleven fields of investigation which are occupied by different scientific departments. These work under imperial control but the co-operation and assist-

ance of Local Governments and Administrations is an essential part of the scheme. The extent to which the Punjab Government and this department in particular are in touch with each of the imperial departments in charge of the different branches of scientific research will be described in the following paragraphs which will also contain an account of our own independent inquiries in similar directions.

Geography.

16. The services of officers of the Survey Department have hitherto never been directly utilised in the Punjab as in other parts of India for the detailed survey of agricultural lands or for the instruction of local surveyors. The cadastral maps which are prepared when a revision of settlement takes place have been always the work of carefully trained local surveyors. For the last 13 years what is known as the square system of measurement has been employed and the results obtained have been proved to be sufficiently accurate for not only assessment but cartographical purposes. In order to check the maps prepared in this way they are all subjected to a careful comparison with the traverse *data* worked out by the Skeleton Survey Parties belonging to the imperial department. The field maps are each in turn subjected to this test of comparison, either when the squares have been laid out on the ground and before plotting has commenced or in exceptional cases when they have been completed. These traverse *data* are not intended as a guide to a surveyor, they are merely checks and no new village survey is passed until the Collector or District Revenue Officer has ascertained its agreement with them. As soon as the maps are found to have passed the test they are then in a position to be used for the correction of the topographical sheets of the imperial department. In furtherance of this subject the officer in charge of the local survey compares his own maps with the 1-inch to a mile maps of the district published by the Surveyor-General in Calcutta. All those sheets in which new topographical details such as villages, roads, railways, &c., appear or from which old details of this description have disappeared are sent to the Survey Department together with the 1-inch standard sheet or sheets in which the local maps are grouped together and separately marked. The local surveys carried out during a re-settlement have up till now undergone the test of comparison with most satisfactory results and have, besides fulfilling the main object for which they were undertaken, enabled local officers to furnish useful information to the imperial department. They might however be utilised still further in more ways than one to give assistance to other branches of the administration. Executive officers in all departments for instance are in the majority of cases very badly equipped with skeleton maps of their respective charges on a sufficiently large scale to be effectively employed to illustrate reports or references to the higher authorities. The only skeleton maps in existence are those of districts on a scale of 8 miles to the inch which are rarely large enough for many purposes for which they are required. Again the polymetrical tables of distances in each district which are used in head-quarter offices for checking travelling allowance bills and other references involving a consideration of distance are not always accurate in their details, but at present there is no means of correcting them by the facts elicited in a new survey.

During the year under review the Himalayan Party (No. 18) of the Survey of India working independently carried on the topographical survey of 317 miles in Kángra, Kulu and Sirmúr on the 4-inch scale, and of 259 miles in the Mandi, Suket, Sirmúr and Simla Hill States on the 2-inch scale. Sixty-seven blocks of demarcated forests covering an area of over 146 square miles situated in Sirmúr, Kulu and Kángra were surveyed on the 4-inch scale, and triangulation work was carried out over 663 square miles in Kulu and the Simla Hill States.

All changes of any importance in territorial jurisdiction such as alterations of the boundaries of the province, districts or tahsíls are duly notified to the Surveyor-General by the Financial Commissioner's office.

During the year the services of a professional survey party have been obtained for the first time to lay down a basis on which the local cadastral measurements could be conducted. Operations have been started in the Dera Ismaíl Khán district only within the last few months.

Geology.

17. The connection between this department and the geological experts under the Government of India is not a close one. An annual statement is submitted from this office showing the statistics which are available regarding the production of minerals in the Punjab. The district returns for the current year are not due till April, but in 1897 the Bír Bangal Iron Mines in Kángra were closed, iron was being worked in the Simla district, and petroleum in Ráwalpindi and Bannu. Another annual statement is submitted for the information of the Inspector of Mines showing the results of the working of the three collieries and three salt mines in Jhelum and Sháhpur. The trans-Indus salt is obtained from surface quarries at Kálábágh and Bahádurkheyl so these do not find a place in this statement.

Meteorology.

18. This department receives the printed daily weather charts, the monthly reviews and the annual meteorological summaries. The number of rainfall registering stations in the province is at present 211, of which 15 are under the direct supervision of the imperial department. The others are in charge of some Government official, usually the tahsíl office kánúngo. They are inspected from time to time by the local revenue authorities and the results of these inspections are submitted to this office. In addition to the returns of rainfall registered daily at the imperial stations this office receives a return of the rainfall at the various registering stations in 13 selected districts once a week, and of that at all stations all over the province once a month. These reports are collated in this office and published in the *Gazette*. During the year raingauges were removed from one station and opened at 11 others. All changes of this kind are carried out in consultation with the officers of the imperial department.

Botany.

19. Very little has as yet been done in the Punjab in the direction of practical botanical investigation. A part of the agri-horticultural gardens at Lahore under the control of this department is placed in charge of the Professor of Botany attached to the local Medical College and is utilised for the instruction of medical students. All expenditure in connection with the upkeep of this section is defrayed from the main grant for the gardens but in other respects the Professor has sole control. No information embodying statistics or reports as to the agricultural value of plants has as yet been supplied by that officer as the result of his investigations.

Economic products.

20. During the year the Reporter on Economic Products who is now permanently employed under the Government of India asked this Department to collect 225 of the articles enumerated in the programme of selections to be made for the Indian Museum at Calcutta and the Imperial Institute and Kew Gardens in England. Forty-four of these have already been obtained through district and forest Officers and the collection of others is in progress. The Director sends a memorandum of his requirements to this office which then selects the officers who are in the best position to procure what is wanted. All the officers thus selected have heartily co-operated in this work and in some cases have furnished interesting reports. Of the annual grant of Rs. 500 which is placed at our disposal to cover the cost of collection only Rs. 56 were spent during the year under review.

Veterinary science.

21. The annual provincial report describing the operations of the Civil Veterinary Department during 1897-98 has already been submitted to, and reviewed by, Government, but in accordance with paragraph 13 of the Resolution of the Government of India, No. $\frac{18}{54}$ of 25th May 1892, the progress made in the direction of horse-breeding has to be described in the following order.

(*a*). *Distribution of Imperial Stallions.*—146 horse and 192 donkey stallions were employed at stud work in the Punjab during 1897-98, as compared with 148 and 198 during the previous year. These were used to cover branded mares over 14 hands. For smaller sized mares, 5 horses and 28 ponies, the property of District Boards, were available in addition to 2 pony stallions belonging to a private breeder.

(*b*). *Registration of mares and of produce.*—The system which had been in vogue for some years of collecting the statistics of the results of horse-breeding operations through the instrumentality of the patwáris was given up during the year under report. The registration returns were formerly submitted by the patwáris through the tahsíls to the Superintendents of the Civil Veterinary Department. These returns were of practically no value, statistical or otherwise, and no attempt was made by the Veterinary Department owing to want of establishment to collate and utilise their results. It is to be feared also that their compilation as carried out by the patwáris too often became a source of harrassment to the people and, all things considered, the interests of horse-breeding have profited by their abolition.

(*c*). *Selection and branding of mares.*—There are now 13,072 branded mares on the imperial list in the Punjab. The selection is in the hands of the Superintendents who carry out this branch of their duties during their periodical tours of inspection and at the various horse-fairs which they attend. One thousand one hundred and forty-seven mares were branded during the year under report, and of these 107, or over 9 per cent., were certificated. Selected district Officers also help in the selection and branding of mares.

(*d*). *Elimination of unfit animals from the register.*—One thousand six hundred and thirty-four branded mares were removed from the registers during the year. Seven hundred and twenty-nine of these had died and the rest had been sold, transferred, declared unfit for breeding or had disappeared without leaving any trace.

(*e*). *Inspection of stallions.*—The Superintendent of the South Punjab inspected all the horse-stands in his jurisdiction with two exceptions during the year. He also attended ten horse-fairs and made an inspection of the Simla and Dharmsála tonga lines. The Superintendent of the North Punjab visited all his districts but one and attended ten horse-fairs. He twice visited the Jhelum Valley road to investigate an outbreak of anthrax and inspected the animals employed on the Kashmír and Murree tonga lines. The horse-stands in the different districts were also periodically visited by the local Civil authorities.

(*f*). *Supply of district stallions.*—At the close of the year there were 34 horse, 58 pony and 7 donkey stallions, the property of District Boards, Courts of Wards and private persons employed at stud work. The total number of coverings was 5,315 against 4,648 last year. The general result of breeding operations was slightly less successful than those of the previous year owing to the continued high prices and scarcity of fodder. Mule breeding also showed a falling-off owing to the large number of animals which were swept up by the Commissariat Department for use as army transport in the frontier campaigns.

(*g*). *Elimination of inferior sires.*—The number of castrations performed by veterinary assistants and salutris fell from 1,219 to 967. The decline is doubtless partly due to the buying up of stock for the frontier and to the different systems of levying castration fees in different districts, but other causes were at work also which a more efficient supervision of the operators would remove.

(*h*). *Instruction in horse-breeding.*—There is no depôt farm in the Punjab on the scale of that situated at Bábúgarh and there are no opportunities of giving instruction at the Ráwalpindi Depôt. But the subject forms part of the curriculum of the Veterinary College at Lahore.

(*i*). *Cattle-breeding.*—Thirty-one Hissár bulls were supplied to 8 districts during the year from the Government cattle farm at Hissár. The cost of 12 of these was defrayed from provincial revenue and the remaining 19 were paid for by various District Boards. No solution has been found of the difficult question of *pun* bulls and it is not likely that the charitably disposed will appreciate their responsibility in the matter until there is a marked change in public opinion.

(*j*). *Investigation and prevention of horse and cattle disease.*—Eleven Veterinary Assistants are employed by the Civil Veterinary Department and 75 by the District Boards in the Province, but owing to several causes their services are not so valuable as they might be. Owing to lack of supervision there is a decided want of method in their operations and the majority of local bodies have not yet realised how necessary it is to keep these officials supplied with the necessary books and instruments.

During the year 59,231 cases of cattle disease of one kind or another were reported. Rinderpest alone was responsible for 13,284 of these cases and nearly half were fatal. This year cases were fewer and the percentage of mortality was lower than usual. This disease appears to be endemic in Kángra and statistics certainly go to show that the number of cases in any particular tract varies with the distance from that district. Last year just over 4,000 cases of anthrax were reported and three-fourths of these proved fatal, while this year only 2,235 cases were reported but the death percentage rose to 81. The district statistics bring out the curious fact that the most affected parts have the smallest percentage of fatal cases. Foot and mouth disease was at once more prevalent and less fatal than any other.

The precautions taken to prevent the spread of horse disease in the province are distinctly effective, but the vitally important question of cattle disease receives very scant attention. The time of the two Superintendents is fully taken up with their duties in connection with horse and mule breeding and until both a third officer is appointed and the veterinary assistants are more effectively supervised there will not be much improvement in the agricultural stocks. The Assistant to the Inspector-General of the Civil Veterinary Department was again deputed this year to investigate cattle disease and visited 5 districts. If the suggestions made in his report are gradually carried out material benefit will result. There are now 9 permanent veterinary dispensaries in the Province and 8 itinerant. Fifteen thousand nine hundred and eighty-one patients altogether were treated in these institutions and the total cost of their maintenance amounted to Rs. 7,400, a very moderate outlay considering the amount of alleviation of animal suffering effected.

Proposals to establish a contagious diseases ward in the Lahore Veterinary College are now under consideration and when these take practical shape it will be possible to give the students a sound training in the methods of prevention and treatment of cattle disease.

Agricultural science.

22. Practically nothing has been done up till now in this direction in the Punjab. Since Dr. Voelcker made a tour through certain districts no agricultural expert has visited the province and no occasion has arisen to consult the professional advisers whose services have recently been secured by the Government of India. Until we possess an experimental farm of our own it is not likely that there will be much occasion for asking for the advice or assistance of specialists. The experiments and enquiries which are at present pursued cannot, owing to the heavy current duties of the officers entrusted with them, be carried on with sufficient care, and the scientific conditions which are so necessary if the results are to be of any value are as yet unattainable. Should the scheme for a provincial farm which is now under consideration be sanctioned the aid of the agricultural chemist will be invited.

Entomology.

23. No investigation into the causes of plant diseases of a scientific nature has been carried out during the year.

Statistics.

24. The following returns are regularly submitted to the Director-General of Statistics:—

(*a*). Annual Returns of Agricultural Statistics.
(*b*). Monthly Agricultural Prospect Report.
(*c*). Half-yearly Return of Spring and Autumn Harvests.
(*d*). Return of Wholesale Prices Current.
(*e*). Forecast Returns of Special Crops.
(*f*). Return of Tea Cultivation.
(*g*). Quinquennial Return of yield of Principal Crops.

The first is sent through the Punjab Government, (*b*) to (*f*) are submitted direct and the last is sent through the Financial Commissioner's Office. The Trade Returns are supplied to the Director-General by the Financial Commissioner.

The chief work of this office may be said to be the collation and review of statistics relating to all the different operations of the administration with which it has concern and as an attempt has been made to describe these in other parts of this report there is no necessity to do more than allude to them here.

Forestry.

25. This office has as yet had very little connection with forestry questions although from time to time the advice and assistance of the officers of the imperial department have been freely given as, for instance, in the efforts made to promote the cultivation of non-indigenous trees and shrubs. It is not improbable however that when the system of ledgering is in full working order the opportunities of mutual co-operation will become more frequent.

CHAPTER V.

SCIENTIFIC AND LOCAL ENQUIRY UNDER PROVINCIAL DIRECTION.

Experimental farm

26. The leading idea of the fifth resolution is the preparation of a scheme under which a staff of agricultural experts will be placed at the disposal of this department and as a preliminary measure the establishment of at least one central experimental farm which shall be adequate both in area and staff. At present this province possesses no such farm. The drawing up of this general scheme is left to the local agricultural departments who are instructed to consult with the imperial Officer placed at the disposal of Local Governments with this object. The instructions contained in this resolution involve a considerable expansion of the operations of this department even if it be found possible to postpone the farm question for some time by obtaining the necessary experts from some other province where facilities already exist for their training. I do not propose to discuss the general question in this report. It is sufficient to note that the subject has already engaged the attention of this department and separate proposals will be submitted later on. It is too early yet to say what will be the exact nature of the programme to be drawn up.

The Bruceabad Farm.

27. At present the only estate under Government management is the Bruceabad Farm, the usual report of which is attached to this report as Appendix A. The farm is situated in the Rájanpur tahsíl of the Dera Gházi Khan district where both the climatic and general agricultural conditions are markedly different from those obtaining in the other districts of the province. It is therefore quite unfitted to take the place of such an institution as is contemplated by the Government of India. The kharíf harvest of the year under report was a failure chiefly because of the heavy Indus floods. The rabi was good however and the outturn of grain was

heavier than that of the spring harvest of 1897. Owing to the great fall in prices the income has increased by only Rs. 123, while the expenditure has risen.

Private farms.

28. No private farms have reported on the results of the past years' working, but during the year under report efforts have been made to enlist the interest of a few large land-holders in different parts of the country in agricultural improvements and I hope in the next report to be able to give some idea of what has been done by private persons on their own properties at our instigation. During my tours I have made special inquiries as to what landowners would consent to co-operate with this department, and I think it would be possible in not a few districts to establish small agricultural societies or clubs, the members of which would take a practical interest in agricultural questions and would in time form a channel of communication between the less intelligent cultivators in their neighbourhood and this department.

Work done during the year.

29. Hitherto very little has been done in the Punjab in connection with agricultural inquiry and improvement. Three sets of crop experiments are carried out. First there are the crop cuttings made by the special establishment in districts under settlement. But these are merely cuttings of the leading crops in representative tracts in order to ascertain the actual outturn which is a factor in assessment calculations. Their object is to obtain a record of existing facts and not to discover how improvements may be effected. Next there are the experiments carried out in selected districts with new staples or new varieties of seeds. This series of experiments has been in operation for some years now but the success has been limited. District Officers have as a rule been too heavily burdened with their ordinary administrative duties to be able to devote sufficient time and attention to these ventures and the instructions for their guidance issued from this office have been too often meagre and vague owing to the want of expert assistance. This branch of agricultural operations has now been taken in hand and efforts are being made to systematize it and render its results of more practical value. A full description of these efforts and the success which attends them will be furnished in the next report. Similar experiments are conducted from time to time in the agri-horticultural gardens at Lahore and these will be described in the annual report of that institution. I would only note here regarding them that the only available area to which they are confined barely exceeds three acres and this part of the garden Superintendent's duties is necessarily subordinated to his other work.

Monographs.

30. Arrangements were made nearly two years ago for the preparation of monographs on agricultural subjects and the late Bhai Arjan Singh was selected to compile the first on manure. He had collected considerable material before his death in July last. This has been made over to Lála Ganga Sahái, Personal Assistant to the Director of Land Records, who has now undertaken the task. The next volume on fodder will be prepared by Mr. C. A. Barron, C. S., Assistant Settlement Officer, Moóltán.

CHAPTER VI.

AGRICULTURAL EDUCATION.

Essentials of primary education.

31. The sixth Resolution raises some very large issues under this head. The exposition however which is given of the principles on which provincial systems of primary education should be based affects so closely not only the operations of this department but also the general educational policy of the country that it will be more fitting and more convenient to make these questions the subject of a separate reference. I propose therefore to address the Financial Commissioner later on regarding the

extent to which the present system of primary instruction fulfils the declared wishes of Government, the position of agriculture in the general scheme of education and the co-operation between the two departments of Education and Agriculture. These matters all require deeper research and more careful consideration than are at present possible and an annual report is not the most suitable channel in which to indulge in a general criticism of existing conditions or to advance recommendations for the future. I would only say here with regard to primary education that the unpopularity of the Zamíndári schools referred to in the last report of the Director of Public Instruction may perhaps be attributable not so much to the inability of the agriculturist classes to appreciate the object of these institutions as to the faults in the system and style of instruction conveyed in them. It is to be hoped that nothing will be done towards their abolition until every possible means of making them more effective has been tried.

Readers and text-books.

32. The suitability of the present series of readers and text-books and the possibility of so altering or expanding them as to make the information they convey match more closely with the living ideals of the classes for whom it is intended will also be dealt with in a future reference. The reader which was compiled by Mr. Fred. Robertson, C.S., assisted by Lála Paira Rám, explaining the system of land records in simple language has now been translated, but has not as yet been introduced into the school curriculum.

Training schools.

33. There are five Normal schools in the province but only one—that at Lahore—has a class for training teachers for the Zamíndári schools. Agriculture is one of the subjects taught and at the last examination there were few failures. I am at present not in a position to give an opinion on the kind of agricultural training given at the Lahore Normal school, but *primâ facie* it must leave a good deal to be desired from a practical point of view owing to the lack of a properly organised experimental farm. This subject however is so bound up with those of the general position of education and the establishment of a farm that I cannot do more than allude to it here. It is at present impossible to supply Government with the information necessary before the directions contained in paragraph 32 can be complied with.

Higher education in agriculture.

34. The Punjab University has within the last two or three years arranged for agriculture as a separate subject in the Middle School examination, as well as in the Entrance examination (Science Faculty) but it is a question whether the schools are in a position to send up men for the test. The Government of India contemplate the establishment of one Agricultural College for the two Upper Provinces at some place in Northern India, and propose to invite the attention of Local Governments separately to the subject. Should some such scheme eventually take shape there must be a special school course leading up to it and here again the question of an agricultural farm comes in.

The education of the subordinate revenue staff.

35. In the preceding paragraphs I have given reasons for postponing a discussion of how far the present educational system suits boys or students designed for an agricultural calling. As to how far the other objects detailed in paragraph 9 of the eighth Resolution are attained it may be said that the course of instruction now given is generally adequate for students who are designed for village accountantships and circle appointments. It is certainly not sufficiently agricultural in colouring and does not as a rule familiarise them with the facts and problems with which they will have to deal when they become pátwarís or kánúngos. But the standard of qualifications which are imparted to this class is steadily rising. They are better accountants and better clerks than their predecessors so that they are more able to take advantage of the special instruction they receive in the patwári schools. Some officers contend that their morale also is improving, but the evidence of this tendency is not so clear. A Patwári school directly under the management of the local revenue authorities is held for some months every second or third year in each district. The instruction consists of lessons in surveying and the land-records system and is very largely practical. The

ranks of the kánúngos are recruited from patwáris with marked qualifications and from selected candidates for Government employ who have passed the Entrance Examination. As a rule no one is appointed to the charge of a circle until he has passed at one of the periodical examinations held by the Director and—in the case of Entrance passed men—have proved their fitness by practical work in the field.

CHAPTER VII.

PUBLICATION OF AGRICULTURAL INFORMATION.

Objects of agricultural information.

36. In the preamble to the seventh resolution it is stated that one of the main objects of the Department of Agriculture is "the rendering available of facts and statistics in order that Government and its officers may always be in possession of an adequate knowledge of the condition of the country, its population and its resources," and that these facts and statistics should be collected by three different agencies—The land records establishment, imperial scientific departments and the provincial agricultural departments.

Information derived from land records.

37. As regards the first of the three ways in which information may be rendered available from the land records considerable progress has lately been made in re-arranging the records so as to make them more accessible and therefore more useful. Till within the last eighteen months the facts and statistics for the different villages, assessment circles, tahsils and districts were compiled in vernacular note-books each of which had its English counterpart. The vernacular books were the originals. As a rule they were compiled by the kánúngo staff, while the English note-books were kept up by another set of clerks who were ignorant of the system on which the originals were compiled and unable to appreciate the information they conveyed and who were only required to make accurate copies and write English numerals correctly. These English note-books were rarely kept up to date in any district except during a revision of settlement and were thus not infrequently useless for the purpose for which they were maintained. Thanks to the rise in the standard of educational qualifications of the subordinate revenue establishment it was found possible to introduce in every district a series of note-books with bilingual headings which are filled up with English numerals the task of compilation being quite within the competence of the men to whom it is entrusted. The two sets of books have thus been done away with and a new series has taken their place. Considerable economy of labour has been effected, the risk of error from mistakes in copying has been eliminated and the new note-books are equally accessible and intelligible to the highest and lowest classes of revenue officials. The statements which make up these books have not been altered. They are those prescribed by the rules under the Land Revenue and Tenancy Acts (Nos. XVII and XVI of 1887) and give statistical information regarding the tribes, area, crops, irrigation, tenures, rents, revenue liabilities, revenue assignments, live-stock and other agricultural resources of the village or tract they severally deal with. They are all punctually maintained and with a few and comparatively unimportant exceptions they give an accurate and reliable presentment of facts. The only statements the accuracy of which I have had occasion to question at some of my periodical inspections are the revenue account, the rent statement and that dealing with agricultural live-stock. The first named contains the history of the collections and arrears of revenue and as this subject is the peculiar province of a special set of financial clerks in every tahsíl and district the subordinate revenue staff have never fully recognised their own particular responsibility in the matter. No statement is of more use than this when it is accurately compiled in tracing the financial history of any village or sub-division or in deciding upon such questions as the incidence of the different instalments of the revenue. The areas on which the varying

classes and rates of rent are paid are generally recorded with commendable accuracy in the statement "Abstract of cultivating occupancy," but the return which immediately follows that statement and which professes to give the prevailing rents on the different classes of land is generally capable of still further improvement. Up till this year the return of cattle carts, &c., has been quadrennial, that is the figures for only one-fourth of the villages in the province were up to date the others being from one to three years old. Under the orders of the Government of India however this system has been abolished and a census of live-stock will now be taken all over the Punjab on the same date once every five years. The first census was held in February 1899 and the results will appear in the return of cattle to be compiled this year. This new procedure will have the effect of making this particular statement much more reliable.

Considerable progress has been made with the abstract village note-books, frequently known by the term *pargana* books to distinguish them from the note-books described in the preceding paragraph. These have been described in a previous chapter.

Collection and review of district statistics.

38. The second process by which the seventh resolution directs that the land records may be utilised is the collation and review of the statistics of each district and division for the province. The method by which this is to be done is described as one of "ledgering" and is explained in paragraph 4 of the resolution. The statistics furnished by each district and division are already collated and reviewed by this office in the returns which accompany Part I of the annual Land Revenue Administration report. District Officers submit the returns and reports for their respective charges to Commissioners who forward them with their own comments. The returns are then collated in this office and are incorporated in the published report of the Financial Commissioner along with a detailed discussion of the facts they bring out. They are finally reviewed by the Local Government and copies of the returns are furnished to the Director-General of Statistics.

In addition to the large mass of information annually supplied in this way each district through any part of which a railway passes submits a return once a fortnight showing the movements of foodgrains. These are collected and checked in this office and forwarded to the Local Government with an explanatory review. The information they contain is of great interest and, in the case of districts with large areas dependent on rain which happen to be traversed by a railway, of no little value as indicating the condition of stocks and the extent to which they are from time to time replenished.

Beyond what has been indicated above nothing has as yet been done in this office in the direction of "ledgering" which is the collection and collation of special facts and statistics under appropriate subject heads. Efforts will now be made to develop this system, but as it will involve a complete overhauling of this office it will be some time before it will be in thorough working order. The information which will now be ledgered as directed has hitherto always been recorded and catalogued in this office and no difficulty has been found in having access to it, but the newly prescribed method of classification has distinct advantages especially in view of the eventual issue of bulletins.

Communication by local officers of special information.

39. No system has as yet been established under which local officers communicate from time to time to this department facts of special interest which are brought to their notice during their tours and inspections, although some annual revenue reports occasionally contain a reference to such occurrences. Last year, for instance, the Deputy Commissioner of Umballa gave an account of the excellent results achieved by the planting of the *bind-pula* grass in checking the destructive action of hill-torrents in his district. This note was printed as an appendix to the annual report of this department and circulated to all other Deputy Commissioners in the province. If local officers were in the habit of supplying this office with any remarkable facts bearing on agricultural conditions which happened to come to their notice a useful store of information would gradually

be rendered much more widely available than is the case at present. But the officers who are likely to come across such facts—I refer to Deputy Commissioners Revenue Assistants and Tahsíldárs—have their time fully occupied already with the ordinary details of the administration. In the meantime however a beginning might be made if the Government would issue some such order as is suggested in the last sentence of paragraph 6 of the seventh Resolution.

Information published by the Imperial Scientific Departments.

40. The prescribed periodical and special reports published by the various scientific departments under the Government of India were received during the year.

Information published by this Department.

41. The information at present published by this Department is as follows:—

The weekly agricultural prospect reports of 13 selected districts are published in the *Punjab Gazette* every week along with a brief summary compiled in this office. The monthly agricultural prospect reports of each district in the province are also collated in this office and published regularly in the *Government Gazette*. Hitherto no attempt has been made to summarise the monthly reports so as to give an idea of agricultural conditions in the province generally, but in future a summary will always be given somewhat on the lines of that issued in the North-Western Provinces.

On receipt of the district reports of the spring and autumn harvests they are collated in this office and published in the *Gazette* along with a review and a summing up of the results all over the province. First, second and final forecasts of each of the trade staples selected for special treatment are regularly drawn up as prescribed in the Revenue Circulars and published. Very little has as yet been done however towards the maintenance of a series of provincial ledgers on the model of those issued by the imperial departments or the communication of special information to other provincial departments and to the Editor of the imperial series. The desirability of both operations is realised and endeavours will now be made to organise a working scheme by which all passages in official papers and reports of which the preservation for future publication may be desirable will be noted and registered under appropriate headings. This will save from extinction a certain amount of interesting information which hitherto has been so scattered as to be practically unavailable and will in time, it is hoped, enable this department to furnish contributions to the agricultural ledger.

Ledgering of agricultural experiments.

42. At present no experimental farm exists in this province though the establishment of such an institution is now under consideration. The only agricultural experiments which are carried on under existing conditions are those described above in para 29. Until the Punjab possesses a representative experimental farm of its own it is not likely that this department will be in a position to do much on the lines indicated in the 17th paragraph of the seventh resolution.

Statistical atlas.

43. The suggestion as to the preparation of a statistical atlas for the province will be kept in view. Such a compilation will be useful as well as interesting and if regularly kept up to date will in time form a ready means of tracing the history of provincial development.

CHAPTER VIII.

FINAL.

Notice of officers.

44. As stated in the first chapter Lála Paira Rám has left this department for the regular line and I am indebted to him for the assistance which his long experience of the office enabled him to afford. The services of Mr. P. D. Shroff, Superintendent, also deserve recognition. I consider that the department is fortunate in having secured the services of Lála Ganga Sahái as Personal Assistant and I am personally grateful to him for the help he has given me.

Conclusion.

45. In conclusion I have to apologise both for the somewhat disjointed character of this report and for the delay that has taken place in submitting it. The reason in each case is the same. This is the first report written on the newly prescribed plan which is not altogether convenient for describing the progress made during the year on the old lines which must now be gradually modified in order that our sphere of action may be expanded in accordance with the instructions of the Government of India. The result is that the foregoing chapters do not include a description of some of the proceedings of this department which were discussed in former reports and here and there treat of subjects which are more or less matters of common knowledge. The report as a whole is more an attempt to set forth how far our operations as developed up to now realise or fall short of the standard prescribed by the new resolutions. The latter practically mark the conclusion of the first period of the history of this department by indicating what new fields of activity hitherto hardly touched must be taken up in the future. But before this can be done many changes will have to be made in our procedure and these I have attempted to sketch in the preceding pages. The report is therefore in many ways more a promise of future performance than a detailed record of work done, and the difficulties attending its compilation, in which task my Personal Assistant has given material help, have been exceptionally great.

I have the honour to be,

SIR,

Your most obedient servant,

J. R. DUNLOP-SMITH, CAPT.,

Director of Land Records and Agriculture, Punjab.

APPENDIX A.

Report on the working of the Bruceabad Estate for the year 1897-98.

I.—General.

This year has been on the whole a good one and the results are satisfactory. Last year in June and July there were heavy floods from the river and again in September. Some kharíf crops were destroyed by the later floods and the crops of *til, másh,* gram, &c., which were sown after the later floods, sustained much damage from unfavourable winds; the kharíf this year was therefore a failure. These heavy floods acted in both ways with respect to the rabi. On the one hand, the low-lying land was so swamped that the crops on them, if any, were not so good as usual; whilst on the other, the excess of water irrigated the high-lying land and produced excellent crops on it. Thus, compared with last year, the kharíf was a failure and the rabi (excluding *rakhs* Sohára and Ghauspur), was very nearly the same as the previous rabi, the yield per acre being, however, considerably better this year. The figures showing the yields per acre of wheat (the staple crop) and barley for the two years are as follows:—

	Yield per acre.			
	Wheat.		Barley.	
	Mds.	Sérs.	Mds.	Sérs.
1896-97	5	35	9	13
1897-98	6	8	14	17

It will thus be seen that the increase in yield of wheat was very considerable, whilst the increase in yield of barley was extraordinary this year. It is satisfactory to be able to report that this year *rakhs* Sohára and Ghauspur received a supply of Rod-i-kohi water—the first time for some years—and 6,032 *kanals* of land were cropped in them and an income of Rs. 2,549 derived thereform. This is the first income derived from these *rakhs* since 1895. The total area cropped this year compared with last is as follows:—

	Kharíf.	Rabi.	Total.
	Kanals.	Kanals.	Kanals.
1896-97	4,705	13,248	17,953
1897-98	2,901	18,987	21,888

But in this area of 18,987 *kanals* are included 6,032 *kanals* cultivated in *rakhs* Sohára and Ghauspur. Exclusive of these *rakhs* the area cropped in the rabi is 12,955 *kanals* or slightly less than that of last year. It is well not to place too much reliance on the absolute accuracy of these figures, however; as they must depend to some extent on the amount of *kharába* allowed by the patwáris.

Pabárpur consists of very high-lying land and consequently very rarely gets silt from the river; the land is in consequence deteriorating and the tenants complain that the *mahsúl* should be reduced from one-fourth to one-fifth; this matter will be seen to later.

II.—Income.

The total income this year is Rs. 12,322 as compared with Rs. 12,254 of the previous year; the details being as follows:—

	Kharíf.	Rabi.
1896-97	2,485	9,769
1897-98	1,356	8,416 + *2,549 = 10,965

*Rakhs Sohára and Ghauspur.

The income from this estste has been rising of late years; the average income from the rabi used only to be some Rs. 6,000. Thus excluding the two *rakhs* above mentioned, there is a very considerable decrease even in the rabi income as compared with last year. The reason is that prices ruled much lower this year; thus more than counterbalancing the better yield per acre obtained. The prices this year and last for some of the principal crops are given below, wheat being of course the chief crop.

	Price per maund.		
	Wheat.	Barley.	Oilseed.
	Rs. a. p.	Rs. a. p.	Rs. a. p.
1896-97	3 13 0	2 11 0	4 0 0
1897-98	3 5 0	2 0 0	2 11 0

If the income and the area cropped be compared, the following result appears:—

	Average income per kanal.	
	Kharíf.	Rabi.
	Rs. a. p.	Rs. a. p.
1896-97	0 8 5	0 11 9
1897-98	0 7 5	0 9 3

III.—Expenditure.

Total expenditure this year was Rs. 1,770-11-3 compared with Rs. 1,594-5-3 last year. There has been a slight increase in establishment consequent on the cultivation of *rakhs* Sohára and Ghauspur and Rs. 100 were paid this year in rewards for good work performed last year.

IV.—Concluding Remarks.

The kharíf crops for the ensuing year are reported to be good. Although there have been no floods this year, the Bruceabad soil retains the moisture owing to the close proximity of the river, so that on the low-lying land there will probably be better crops in the rabi than there were this year.

F. H. BURTON,

Assistant Commissioner.

I agree with the Assistant Commissioner's conclusions, *i.e.*, that the fall in price is practically counterbalanced by the increased outturn per acre—the area cultivated being practically the same. This increased outturn is probably due to better supervision; though the soil and climatic circumstances may have had something to do with it. Of late years the results have been carefully checked with the average outturns of similar soils as shown in the Settlement Returns. This probably accounts for the improved supervision.

C. P. THOMPSON,

Deputy Commissioner, Dera Gházi Khan.

No. I.—Statement showing Income and Expenditure of Bruceabad Farm for the year 1897-98.

Serial No.	Name of village.	Realizable.			Realized.			Balance realizable on 1st October 1898.
		Balance from 1896-97.	Demand for the year 1897-98.	Total realizable.	Credited into Treasury.	Spent directly.	Total.	
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Bruceabad, &c.	6,278 2 1	9,772 8 10	16,050 10 11	10,883 5 2	596 15 3	11,480 4 5	4,570 6 6
2	Rakh Sohára, &c.	...	2,549 9 5	2,549 9 5	...	...	...	2,549 9 5
	Total	6,278 2 1	12,322 2 3	18,600 4 4	10,883 5 2	596 15 3	11,480 4 5	7,119 15 11

F. H. BURTON,

Assistant Commissioner.

No. II.—Statement showing Faslwar Demand, Realization and Balances of the Bruceabad Farm, with its Dependencies for three years ending Rabi 1898.

Serial No.	Name of village.	Name of harvest.	Demand. Balance.	Demand. Demand for current harvest.	Demand. Total.	Expenses. Credited in to Treasury.	Expenses. Spent direct.	Expenses. Total realizations.	Balance.	Remarks.
			Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
1	Bruceabad	Kharif ... Sambat 1952 / A. D. 1895	3,579 10 2	1,466 14 9	5,046 8 11	2,413 10 0	491 12 0	2,905 6 0	2,141 2 11	
2	Pahárpur	Rabi ... Sambat 1953 / A. D. 1896	2,141 2 11	5,840 13 3	7,982 0 2	4,873 7 3	...	4,873 7 3	3,108 8 11	
3	Jágír Janúbi	Kharif ... Sambat 1953 / A. D. 1896	3,108 8 11	2,485 0 2	5,593 9 1	3,479 12 11	...	3,479 12 11	2,113 12 2	
4	Jágír Shumáli	Rabi ... Sambat 1954 / A. D. 1897	2,113 12 2	9,769 9 8	11,883 5 10	5,101 6 6	503 13 3	5,605 3 9	6,278 2 1	
5	Patti Sarkári	Kharif ... Sambat 1954 / A. D. 1897	6,278 2 1	1,356 3 5	7,634 5 6	5,145 0 1	199 9 0	5,344 9 1	2,289 12 5	
		Rabi ... Sambat 1955 / A. D. 1898	2,289 12 5	8,416 5 5	10,706 1 10	5,738 5 1	397 6 3	6,135 11 4	4,570 6 6	
6	Rakh Sohára	Kharif ... Sambat 1952 / A. D. 1895	699 9 3	...	699 9 3	674 9 3	25 0 0	699 9 3	...	
		Rabi ... Sambat 1953 / A. D. 1896	...	...	...	...	...	...	...	
		Kharif ... Sambat 1953 / A. D. 1896	...	...	...	...	...	...	...	
7	Rakh Ghauspur	Rabi ... Sambat 1954 / A. D. 1897	...	...	...	...	...	...	...	
		Kharif ... Sambat 1954 / A. D. 1897	...	...	...	...	...	...	...	
		Rabi ... Sambat 1955 / A. D. 1898	...	2,549 9 5	2,549 9 5	...	...	...	2,549 9 5	

F. H. BURTON,
Assistant Commissioner.

No. III.—Statement showing the area, in Kanals, of villages connected with the Bruceabad Estate.

Serial No.	Name of village.	*Area of last Settlement.*						1895-96.						1896-97.						1897-98.					
		Area.	Ghair Mumkin.	Banjar Kadím.	Banjar Jadíd.	Uncultivated.	Cultivated.	Area.	Ghair Mumkin.	Banjar Kadím.	Banjar Jadíd.	Uncultivated.	Cultivated.	Area.	Ghair Mumkin.	Banjar Kadím.	Banjar Jadíd.	Uncultivated.	Cultivated.	Area.	Ghair Mumkin.	Banjar Kadím.	Banjar Jadíd.	Uncultivated.	Cultivated.
1	Bruceabad ...	32,106	2,907	4,046	128	8,961	16,064	31,952	2,568	4,136	128	9,056	16,064	32,106	2,907	4,046	128	9,517	15,508	32,104	3,232	3,720	...	11,920	13,232
2	Pahárpur ...	31,333	7,594	19,921	296	1,674	1,848	31,288	7,752	296	19,760	...	1,848	31,333	7,594	19,921	296	1,761	1,761	31,333	7,125	20,136	120	2,624	1,328
3	Jágír Janúbi ...	6,015	596	3,893	...	1,126	400	6,048	624	3,896	...	1,128	400	6,015	596	3,893	...	1,135	391	6,015	596	3,684	...	1,263	472
4	Jágír Shumáli...	1,581	135	456	12	885	93	1,584	136	456	8	896	88	1,581	135	456	12	685	293	1,584	136	368	8	768	304
5	Rakh Sohára ...	18,674	249	9,423	1,388	7,614	...	18,672	248	9,424	1,384	7,616	...	18,674	249	9,423	1,388	7,614	...	18,673	249	10,760	4,872	1,016	1,776
6	Rakh Ghauspur	29,884	392	20,759	...	8,733	...	29,920	64	21,120	8,736	...	...	29,884	392	20,759	...	8,733	...	29,884	56	22,352	...	3,220	4,256
7	Patti Sarkári ...	91,937	1,091	89,796	250	569	231	91,936	1,088	89,736	248	568	296	91,937	1,091	89,796	250	800	...	91,937	1,091	88,840	...	1,686	520
	Total ...	211,530	12,964	148,294	2,074	29,562	18,636	211,400	12,480	129,064	12,264	20,896	18,696	211,530	12,964	148,294	2,074	30,245	17,953	211,730	12,485	149,860	5,000	22,497	21,888

F. H. BURTON,

Assistant Commissioner.

No. IV.—Statement showing Income of Bruceabad Farm for (1895-96), (1896-97), (1897-98).

Serial No.	Name of village.	Name of crop.	1895-96.			1896-97.			1897-98.		
			Income in kind.	Cash.	Total.	Income in kind.	Cash.	Total.	Income in kind.	Cash.	Total.
			Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Bruceabad	Kharíf	876 7 9	395 7 0	1,271 14 9	1,240 1 3	418 0 0	1,658 1 3	454 4 9	425 12 0	880 0 9
		Rabi	4,425 10 8	628 7 3	5,054 1 11	7,848 3 11	798 9 11	8,646 13 10	6,426 3 5	1,004 11 0	7,430 14 5
2	Pahárpur	Kharíf	90 6 5	2 0 0	92 6 5	197 15 4	68 8 0	266 7 4	4 6 3	2 0 0	6 6 3
		Rabi	663 11 8	69 14 11	733 10 7	1,049 15 10	72 12 0	1,122 11 10	852 11 1	67 8 0	920 3 1
3	Jágír Janubi, Jágír Shumáli	Kharíf	101 12 8	...	101 12 8	559 3 7	1 4 0	560 7 7	448 10 9	0 12 6	449 7 3
		Rabi	39 8 6	...	39 8 6	...	...	...	12 14 9	1 7 2	14 6 11
4	Patti Sarkári	Kharíf	0 12 11	...	0 12 11	...	...	...	20 5 6	...	20 5 6
		Rabi	13 8 3	...	13 8 3	...	...	...	50 13 10	0 0 2	50 14 0
5	Rakh Sohára	Kharíf	...	...	...	...	...	...	...	...	...
		Rabi	...	...	...	...	..	...	1,304 10 5	...	1,304 10 5
6	Rakh Ghanspur	Kharíf	...	...	...	...	...	...	...	...	...
		Rabi	...	...	...	...	...	...	1,210 1 0	34 14 0	1,244 15 0
	Total	.....	6,211 14 10	1,095 13 2	7,307 12 0	10,895 7 11	1,359 1 11	12,254 9 10	10,785 1 5	1,537 0 10	12,322 2 3

F. H. BURTON,

Assistant Commissioner.

REPORT

ON THE

OPERATIONS OF THE DEPARTMENT

OF

LAND RECORDS AND AGRICULTURE,

PUNJAB,

For the year ending 30th September 1899.

Published by Authority.

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1900

No. 58.

FROM

A. H. DIACK, ESQUIRE,

Revenue and Financial Secretary to Government,

Punjab and its Dependencies,

To

THE SENIOR SECRETARY TO FINANCIAL COMMISSIONER, PUNJAB.

Dated Lahore, 12th May 1900.

File No.

Revenue and Agriculture.

Agriculture.

SIR,

IN reply to Mr. Langley's letter No. 286, dated the 7th of April 1900, communicating the remarks of the Financial Commissioner on the Report of the Department of Land Records and Agriculture, I am directed to convey the following remarks and orders of the Lieutenant-Governor.

2. With reference to paragraph 7 of Mr. Langley's letter and paragraph 11 of the report, I am to say that the results of Mr. Maclagan's arrangements for affording to Canal Officers details by villages about irrigation and of the extension of the system to other districts which is contemplated by the Financial Commissioner should be referred to in subsequent reports and will be awaited with interest.

3. The attention of the Chief Engineer, Irrigation Branch, will, as suggested in paragraph 8 of the letter above quoted, be drawn to the remarks on—

(1) the water-logging above Dádúpur,

(2) the results of deepening the Rangoi and Ghaggar in Hissar,

(3) the over-irrigation in the Naili Circle of the Kharar Tahsíl,

contained in paragraph 11 of the report.

4. With reference to paragraph 9 of Mr. Langley's letter, Sir Mackworth Young thinks advantage should result from the enquiry ordered by the Financial Commissioner into the cases in which extensive failure of sailáb has occurred during the last five years.

5. The Lieutenant-Governor understands that the Jalálpur Canal now being dug by famine labour will take the place of the Municipal Canal in the Pind Dádan Khan Tahsíl of the Jhelum District in extending canal irrigation to the worst *kalar* tracts of that tahsíl. The conditions under which rice cropping for three or four years is, as is stated in paragraph 12 of the report, effective in reclaiming such tracts might be investigated with a view to its being tried more widely.

6. Sir Mackworth Young is pleased to observe from paragraph 17 of the report that useful work was done during the year in diffusing a knowledge of economic products.

7. With reference to paragraph 19 of the report it is satisfactory to observe that while there has been no opportunity of experimenting with locust-destroying powder since its receipt, Deputy Commissioners are being put in a position to use it when necessity arises.

8. Sir Mackworth Young agrees with the Financial Commissioner that the question of improving the breed of donkeys in the Punjab as a means of military transport alluded to in paragraph 11 of Mr. Langley's letter should be commended to the consideration of the Director and the Civil Veterinary Department.

9. The suggestion made in paragraph 20 of the report for the inspection of horse-dealers' yards at Lahore and Amritsar is in the Lieutenant-Governor's opinion an excellent one, and Sir Mackworth Young hopes that the Director of Land Records will be able to arrange for regular inspections there. The falling-off in the number of gelding operations during the year was remarkable. The selection of suitable sires for the different classes of cattle in different districts which is being taken up along with the cattle survey of the Province is in His Honor's opinion a most important matter. The scheme for the amalgamation and regrading of the Subordinate Veterinary Department alluded to by the Director has been worked out by him and has been submitted for the orders of the Government of India.

10. With reference to paragraph 12 of the letter above quoted the Lieutenant-Governor agrees with the Financial Commissioner that attention should be directed to the possibility of continuing the raising of petroleum in the Ráwalpindi District.

11. With regard to the utilization for experimental purposes of land at Lyallpur under the control of the Municipal Committee referred to in paragraph 24 of the report, I am to request that if the Director has any definite scheme to propose he will refer the matter separately. I am to add that under the orders passed on the subject the records of the Municipality will be available to the Director of Land Records for framing estimates of the yield of crops.

12. The Lieutenant-Governor observes that the Bruceabad Farm adverted to in paragraph 25 of the Director of Land Records' report is, as there remarked, not an experimental farm at all, but simply Government land on which rent is taken in kind. There is little reason in Sir Mackworth Young's opinion for continuing to deal with this farm in the report.

13. The Lieutenant-Governor observes that while the experiments carried out in the Lahore Agri-Horticultural Gardens were not successful with cotton they had better fortune with Indian corn. Sugar beet cultivation was unsuccessful in Hazára, but it is satisfactory to observe that it is being tried elsewhere. With reference to paragraph 13 of Mr. Langley's letter, it appears that date cultivation has so far been successful in Ferozepore only. The suggestion that it should be tried on a scientific basis and on a large scale is one that might be worked out by Government on Government land, but there seems to be little chance of the natives taking an interest in it. The people of Kulu are exceptionally apathetic about gain, but their attitude towards the growing of European fruit as indicated in the Assistant Commissioner's remarks quoted by the Director is typical of that of the ordinary agriculturist in such matters throughout the Province. Sir Mackworth Young, however, hopes that the Director of Land Records will be able to formulate proposals for date cultivation on right methods.

14. With reference to paragraph 27 of the report, the Lieutenant-Governor thinks that it is certainly a matter of the first importance in connection with agricultural education that the Normal School students should be given opportunities of getting practical lessons.

15. Lastly, it is observed that the office of Director of Land Records was held throughout the year by Major Dunlop-Smith except during his absence on privilege leave, when the duties were taken by the Settlement Commissioner in addition to his own. Sir Mackworth Young agrees with the Financial Commissioner in his commendation of the manner in which the work of the Department was carried on during the year, and is much obliged to Mr. Sykes for his concise and interesting report.

I have, &c.,

A. H. DIACK,

Revenue and Finl. Secy. to Govt., Punjab.

Punjab Government Press, Lahore—13-6-1900—300.

No. 471.

FROM

R. SYKES, ESQUIRE, C. S.,
Director of Land Records
and Agriculture, Punjab,

To

A. H. GRANT, ESQUIRE, C. S.,
Officiating Senior Secretary to the Financial
Commissioner, Punjab.

Dated LAHORE, *5th March* 1900.

SIR,

I have the honour to submit the Annual Progress Report of this Department, for the year ending 30th September 1899.

I have the honour to be,
SIR,
Your most obedient servant,
R. SYKES, C. S.,
Officiating Director of Land Records and Agriculture, Punjab.

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ANNUAL REPORT
OF THE
DEPARTMENT
OF
LAND RECORDS AND AGRICULTURE, PUNJAB.

For the year ending 30th September 1899.

CHAPTER I.
PREFATORY.

Personnel.

1. Major J. R. Dunlop-Smith, my predecessor, who is now serving under the Government of India as Famine Commissioner, Rájputána, held charge of the office of Director of Land Records and Agriculture throughout the year, except for the period from the 4th May 1899 to the 23rd July 1899, during which he was on leave During this interval Lieutenant-Colonel J. A. L. Montgomery, Settlement Commissioner, carried on the duties of the Director in addition to his own. I relieved Major Dunlop-Smith on the 12th October 1899. Lála Ganga Sáhái continued to work as Personal Assistant to the Director, and Mr. P. D. Shroff as Superintendent of the Office. The clerical establishment has remained the same as before.

Tours.

2. The Director visited the head-quarters of 14 districts and 30 tahsíls during the year. Last year 16 districts and 34 tahsíls were inspected. During the year under report special attention was paid to the revenue records of frontier districts from Pesháwar to Dera Gházi Khan; as usual the records prepared by the patwárís and kánúngos were checked, and the work done by the Superior Revenue Staff was examined. Copies of the inspection notes were submitted to the Financial Commissioner. Speaking generally, it may be said that the subordinate establishment understands and carries out the rules and instructions under the Land Revenue and Tenancy Acts. The various agricultural note-books kept in the tahsíl and district offices, for the villages, circles, tahsíls and districts are also on the whole accurate. The important mistakes and omissions pointed out in the preparation of various statements have received attention, and the District Staff has taken steps to remove those defects. During the year under report the Director paid considerable attention to the manner in which district kánúngos carried out the inspection duties required by Rules 134, 135 and 136 of the Land Revenue Act. The distinction between old and new mutations, as directed in this Office Circular letter No. 2, dated 23rd June 1894, which was not properly observed in some districts, was clearly explained. The method of preparation of Price Current Registers was scrutinized, and the importance of having the entries in the district kánúngo's Price Register attested by the Treasury Officer as required by paragraph 4 of Revenue Circular No. 6 was brought to notice. Other matters upon which the Director gave advice in the course of his inspections were as follows:—

1. A detailed and proper scrutiny of the Patwár Fund Registers by the district kánúngo and Superior Revenue Officers.
2. The arrangement of district kánúngo's register of patwárí circles.
3. The maintenance of *zaildárí* and *lambardárí* registers in proper form.
4. The proper checking of the mutation fee demand (which is a kind of fluctuating revenue).
5. The maintenance of Register of Estates, the property of Government.
6. The maintenance of *máfi* registers according to the revised form given in Correction Slip No. 400, dated 28th July 1893, to Revenue Circular No. 37.

Miscellaneous work.

3. The Director visited the important sugar-cane growing districts of Hoshiárpur, Jullundur and Gurdáspur in connection with the inquiry about the effect of import of bounty-fed sugar on the indigenous industry of sugar-refining in the Punjab. The result of the inquiry was reported to the Punjab Government.

Kánúngo examinations.

Four examinations of candidates for the post of kánúngo were held at different centres during the year. The examiners were the Director and the Personal Assistant. The following table shows the number of candidates who appeared from each district and the result:—

1 Districts.	2 Number of candidates.	3 Number successful.	4 Number of successful candidates who were grantedcertificates of efficiency.
Hissár	1	...	...
Rohtak	2	2	...
Kángra	8	8	3
Hoshiárpur	16	15	9
Jullundur	2	2	1
Ludhiána	8	8	6
Ferozepore	6	5	1
Multán	7	6	...
Jhang (Lyallpur)	10	10	10
Lahore	1	...	...
Siálkot	11	8	5
Gujrát	2	1	...
Gujránwála	7	7	7
Shahpur	5	2	...
Jhelum	24	16	10
Ráwalpindi	4	2	1
Hazára	2	2	1
Pesháwar	8	5	1
Kohát	8	8	6
Bannú	4	3	...
Dera Ismaíl Khan	30	26	12
Dera Gházi Khan	4	3	2
Kurram	1	1	...
Maler Kotla	1	1	1
Kashmír	1	1	1
Ulwar and Bhartpore	5	5	5
Total	178	147	82

Eighty-three per cent. of the candidates passed the examination.

CHAPTER II.

LAND RECORD ESTABLISHMENTS.

Training and educational qualification of patwáris.

4. The table given below shows the educational qualifications of the patwáris serving in each district during the year 1898-99:—

1	2	3	4	5	6	7	8	9	10	11	12	
Division.	Number.	District.	Total number of patwáris and assistants.	Total who have passed the			Total with educational qualifications.		Total with no educational qualifications.	Total who know only Hindí.	Total agriculturists included in column 4.	
				Entrance Examination.	Middle School Examination.	Primary School Examination.	Actual.	Per cent.			Actual.	Per cent.
Delhi.	1	Hissár	312	1	66	209	276	88	36	...	42	13
	2	Rohtak	242	1	57	131	189	78	53	...	10	4
	3	Gurgáon	312	1	120	102	223	71	88	1	98	31
	4	Delhi	236	...	65	81	146	62	89	1	76	32
	5	Karnál	353	3	42	...	45	87	308	..	32	9
	6	Umballa	381	1	117	...	118	31	263	...	93	24
	7	Simla	8	...	1	7	8	100	...	...	7	88
Jullundur.	8	Kángra	315	...	38	247	285	90	30	...	264	84
	9	Hoshiárpur	481	12	116	113	241	50	236	4	197	41
	10	Jullundur	402	1	65	6	72	18	327	3	142	35
	11	Ludhiána	300	6	89	205	300	100	...	...	34	11
	12	Ferozepore	367	3	68	50	121	33	245	1	110	30
Lahore.	13	Multán	322	14	116	126	256	80	66	...	122	38
	14	Jhang	152	1	32	119	152	100	...	...	50	33
	15	Montgomery	212	1	52	137	190	90	22	...	87	41
	16	Lahore	332	...	95	30	125	37	207	...	101	30
	17	Amritsar	325	2	88	102	192	59	133	...	82	25
	18	Gurdáspur	481	6	99	77	182	38	299	...	112	23
Rawalpindi.	19	Siálkot	420	10	58	352	420	100	...	...	66	16
	20	Gujrát	245	1	25	38	64	26	181	...	32	13
	21	Gujránwála	287	1	56	38	95	33	192	...	17	6
	22	Shahpur	198	5	32	90	127	64	71	...	45	22
	23	Jhelum	250	6	52	23	81	32	169	...	73	29
	24	Ráwalpindi	349	2	58	26	86	25	263	...	199	57
Peshawar.	25	Hazára	136	3	20	30	53	39	83	...	40	29
	26	Peshâwar	327	...	63	137	200	61	127	...	89	27
	27	Kohát	83	...	12	22	34	41	49	...	23	27
Derajat.	28	Bannu	168	...	23	145	168	100	...	...	60	36
	29	Dera Ismaíl Khan ...	207	1	65	40	106	51	101	...	15	7
	30	Dera Gházi Khan ...	162	1	34	11	46	28	116	...	58	36
	31	Muzaffargarh	227	4	47	...	51	22	176	...	22	10
		Total ...	8,592	87	1,871	2,694	4,652	54	3,930	10	2,398	28

Out of a total staff of 8,592 patwáris, 87 or 1 per cent. have passed the Entrance Examination; 1,871 or 22 per cent. have passed the Middle School Examination; 2,694 or 31 per cent. have passed the Primary Examination; 3,930 or 46 per cent. have no educational qualifications whatever.

The total number of Hindí-khán patwáris in the Province is ten. The educational qualifications of patwárí candidates is steadily rising. When the change in the rule regarding the selection of patwáris in accordance with which relationship to the late patwárí confers no claim to succession to the vacant post comes into full operation the proportion of patwáris with no educational qualifications will soon be reduced. Two thousand, three hundred and ninety-eight or 28 per cent. of the whole staff belong to men of the agricultural classes. The districts with the highest proportion of agriculturists are Simla, Kángra, Ráwalpindi, Montgomery, Hoshiárpur, Multan, Dera Gházi Khan, Bannu and Jullundur, and with the lowest proportion, Delhi, Rohtak, Gujránwála, Dera Ismaíl Khan, Karnál, Muzaffargarh, Ludhiána and Gujrát.

Prospects of the patwáris.

5. During the year under report 20 out of 25 vacancies to kánúngos' appointments were given to patwáris. The number of Siáha Navís and Wásil Baki Navís' posts that were filled up from the patwárí ranks is not exactly known. But the remarks entered in last year's report about the prospects of patwáris are kept in view by the District officers. The proposals to improve the status of patwáris by increasing the pay of each grade is awaiting development pending the scheme of provincialisation of Patwárí Fund which was once submitted to the Government, and about which further information called for is also about to be supplied.

Constitution of the kánúngo staff.

6. The constitution of the kánúngo staff in each district and division during the year under report is given below: —

1	2	3	4	5	6	7	8	9	10	11
Division.	Number.	District.	Total number of kánúngos.	Total agriculturists included in column 4.		Direct appointments.		Promoted patwaris.		Number who have not passed Director's Examination.
				Actual.	Per cent.	Actual.	Per cent.	Actual.	Per cent.	
Delhi.	1	Hissár	22	4	18	...	...	22	100	...
	2	Rohtak	16	3	19	...	...	16	100	...
	3	Gurgáon	21	9	43	11	52	10	48	1
	4	Delhi	16	8	50	8	50	8	50	...
	5	Karnál	21	...	...	...	...	21	100	...
	6	Umballa	22	3	14	1	4	21	95	...
	7	Simla	1	1	100	...	...	1	100	...
Jullundur.	8	Kángra	25	23	92	5	20	20	80	...
	9	Hoshiárpur	26	10	38	3	12	23	88	...
	10	Jullundur	20	5	25	3	15	17	85	...
	11	Ludhiána	20	3	15	6	30	14	70	...
	12	Ferozepore	23	5	22	2	9	21	91	...
Lahore.	13	Mooltan	23	...	...	5	22	18	78	...
	14	Jhang	18	10	56	4	22	14	78	...
	15	Montgomery	19	7	37	10	53	9	47	...
	16	Lahore	20	5	25	1	5	19	95	...
	17	Amritsar	15	4	27	1	7	14	93	...
	18	Gurdáspur	24	8	33	3	12	21	87	...
Ráwalpindi.	19	Siálkot	25	10	40	6	24	19	76	...
	20	Gujrát	15	2	13	9	60	6	40	...
	21	Gujránwála	21	3	14	3	14	18	86	...
	22	Shahpur	13	1	7	4	31	9	69	...
	23	Jhelum	15	4	27	2	13	13	87	...
	24	Ráwalpindi	24	14	58	1	4	23	96	...
Peshawar.	25	Hazára	13	2	15	...	...	13	100	...
	26	Pesháwar	25	2	8	6	24	19	76	...
	27	Kohát	11	3	27	...	...	11	100	...
Derajat.	28	Bannu	16	3	19	3	19	13	81	...
	29	Dera Ismaíl Khan ...	20	6	30	3	15	17	85	...
	30	Dera Gházi Khan ...	15	11	73	2	13	13	87	...
	31	Muzaffargarh	18	7	39	2	11	16	89	3
		Total ...	583	176	30	104	18	479	82	4

Out of 583 kánúngos, 104 have received direct appointments to this office, and 479 are promoted patwáris. It is evident from these figures that the claims of patwáris to promotion receive very full consideration indeed. The only districts in which the number of direct appointments exceeds the proportion laid down in Land Revenue Rule 104 (5) are Gurgáon, Delhi, Montgomery and Gujrát.

Four kánúngos on active duty have not yet passed Director's examination. Three of them are in Muzaffargarh and one in Gurgáon. The proportion of agriculturists in the kánúngo staff is 176 out of 583 or 30 per cent. In the districts of Lahore and Bannu there is hardly any kánúngo from the agriculturist class.

Extraneous work done by the kánúngo staff.

7. During the year under report no miscellaneous work, not expressly provided for in the Land Revenue Rules or Revenue Circulars, was thrown on the kánúngo establishment in Hissár, Simla, Kángra, Hoshiárpur, Ferozepore, Siálkot, Shahpur, Jhelum, Pesháwar, Kohát, Montgomery, Delhi, Jullundur, Lahore, Bannu, and Rohtak.

In other districts tahsíl office kánúngos are most frequently required to give assistance in *lambardári* partition and *máfi* cases. Some of the assistance required respecting the supply of information contained in the records in their charge falls strictly within their duties prescribed by the rules, and it is no doubt convenient that office kánúngos should have charge of the registers and files of such cases. The real difficulty is that the work of the tahsíl has to be done somehow, and in heavy revenue or criminal tahsíls it may be impossible to do it without some assistance from the tahsíl kánúngo. The Náib-Tahsíldár is not allowed a judicial moharrir, and somebody must help him in the completion of the records and registers relating to these cases. On the other hand, the Tahsíldár's judicial moharrir is frequently fully occupied with criminal, civil and revenue case work, and all kinds of miscellaneous work.

In Gujrát this year the work thrown on the kánúngos in connection with bringing the suspension account up to date and compiling and issuing *purchás* of accounts relating to such *khewatdárs* was extraordinarily heavy. Their services were also utilised for a week for making arrangements for encamping grounds and collecting supplies. They were also required when going about in their circle to warn the defaulting lambardárs and to direct them to collect revenue and to pay it into the treasury. In Dera Ismaíl Khan the office kánúngos keep the register of Protective Leases in addition to *lambardári* and *máfi* cases.

In Dera Gházi Khan field kánúngos in Tahsíl Sanghar are sometimes required to help in the hill torrent irrigation *to such an extent as is consistent with the due discharge of their legitimate duties.* The tahsíl office kánúngos in that district attend to the following cases :—

1. Land acquisition files.
2. *Lambardári* cases.
3. Hill torrent irrigation files.
4. Cases of leases of Government land for a single harvest or an year.
5. Cases under Section 149, Land Revenue Act.
6. Lists of statutory labour required by the Canal Department under Section 65 of the Canals Act.

The following miscellaneous work is done by tahsíl kánúngo in Ludhiána :—

1. Register of máfi cases.
2. Ditto *lambardári* and *zaildári* cases.
3. Ditto execution of decrees of Civil Courts.
4. Ditto cases under Section 76 of Tenancy Act.
5. Ditto partition cases
6. Ditto miscellaneous cases, Act XVI of 1887.
7. All work connected with the allotment of land on the Chenáb Canal.

In the Ráwalpindi district the miscellaneous work done by the district and tahsíl office kánúngos is shown below :—

District Office Kánúngos.

1. Rakhs miscellaneous papers.
2. Attestation papers of máfidár's existence.
3. Miscellaneous mutation papers received from tahsíls.
4. Papers regarding boundary pillars.
5. Nazúl work.
6. Producing land records before the Courts.

Tahsíl Office Kánúngos.

1. Papers relating to permission for the cutting of trees.
2. Files relating to compensation.
3. Boundary disputes.
4. Rakhs.

In Gurgáon the sadar kánúngo and his assistant compare the travelling allowance bills of Tahsíldárs and Náib-Tahsíldárs with their diaries, and carry out the work of preparing files about leave, transfer and fines, &c., of patwáris and entering them in the *misl band* register after completing their indices. In Gurdáspur the field kánúngos do the work of attachment in revenue cases.

The detail of miscellaneous work done in Muzaffargarh is—

District Kánúngo and Assistant District Kánúngo.

1. Comparison of jamabandi and chher lists.
2. Preparations of Statements XXVIII A, B, C.
3. Preparation of files and issue of orders regarding all notices served on the Deputy Commissioner, under Section 424, Civil Procedure Code in Government suits.
4. Proceedings relating to cattle disease.
5. Checking of Milán Rakba of lands under fluctuating assessment and preparation of Statement D.

Tahsíl Office Kánúngos.

1. Submission of chher lists and crop returns to the Canal Department.
2. Proceedings connected with applications for correcting mistakes in chher lists.
3. Orders relating to cattle disease.
4. Preparation of Statement D.
5. Files relating to the acquisition of land.
6. Preparation of village statements showing canal irrigation and water-advantage rate.
7. Lambardári cases.

Some of the miscellaneous work shown above entirely falls outside the scope of a kánúngo's duties; but a good deal of it is work which can probably be done better with the assistance of the office kánúngo than of the judicial moharrir, and if the work of the tahsíl is so heavy that some of this miscellaneous work must be thrown on the tahsíl kánúngo, I believe that the necessities of the case would be met, as far as the accuracy of the revenue records is concerned, if the tahsíl kánúngo is allowed to have the assistance for two or three months in each year of one of the assistant patwáris in the tahsíl. It is probable that the time of the assistant patwári is not always fully occupied now that the abstract *jamabandís* have been abolished.

Promotion and prospects of Kánúngos.

8. The following promotions were given to the kánúngos during the year under report :—

District.	*Náib-Tahsíldár.*		Deputy Superintendent of Settlement.	Other appointments with detail of each.
	Permanent.	Temporary.		
Rohtak ...	...	3 (on famine duty).	...	...
Delhi ...	...	...	...	1 promoted as Reader of Deputy Commissioner's Office.
Karnál ...	...	2	...	
Ludhiána ...	...	...	...	1 appointed as Assistant Revenue Accountant. 1 appointed as 1st grade Reader to Deputy Commissioner.
Ferozepore ...	...	1 2 sub. *pro tem.*	...	1 (no detail).
Jhelum ...	1	...	...	1 ,,
Bannu ...	...	...	...	1 ,,
Dera Ismaíl Khan	1	...	...	...
Dera Gházi Khan	...	...	...	1 promoted to sadar kánúngo.
Pesháwar ...	...	...	...	1 sadar kánúngo promoted as Settlement Tahsíldár of Kohát.
Hoshiárpur ...	...	1	1 (officiating)	...
Multan ...	...	...	1 ,,	...
Jhang ...	...	1	...	...
Lahore ...	...	1 (deputed to Gurdáspur.)	...	...
Siálkot ...	...	1	1 (officiating)	...
Hazára ...	...	1	...	...
Lyallpur Colony	...	...	1 (officiating)	...

With reference to the question of improving the prospects of promotion in the kánúngo service a special report has been submitted in this office letter No. 19 S., dated 31st August 1899.

CHAPTER III.

UTILISATION OF LAND RECORDS.

Statistical note-books.

9. No change has been introduced in regard to the method of compilation of the statistical note-books, which are maintained by the land record agency. The abstract village note-books, the preparation of which is one of the most valuable revenue reforms of recent years, are described in paragraph 12 of last year's report. They have now been compiled up to date in almost all the tahsíls of the Province, and have already been utilised to some extent by Deputy Commissioners; as, however, the present cold weather is the first camping season since they were completed not many remarks have yet been recorded in them.

Information *re* agricultural defects: occasional failures.

10. Reports have been received from most districts in regard to the agricultural defects which have come under notice during the past year. No further reference need be made in this report in regard to the failures which are classified as occasional failures, due to unforeseen calamities, such as failure of rain, hailstorms, inundation, &c., as calamities of this nature are mentioned in the land revenue report. But a brief account is given of those defects due to gradual or persistent deterioration which have been brought to notice during the year.

Gradual failure.

11. Gradual failure is explained as gradual deterioration due to ascertainable causes requiring early and special measures of prevention and relief. One suggestion made by the Settlement Officer of Multan under this head relates to the regulation of the supply of canal water to different villages. He notes that canal officers are entirely

dependent on the revenue staff for the supply of statistics regarding cultivation and the amount of canal irrigation. Hitherto the statistics have been supplied only for each canal as a whole, and he thinks that if the canal officers were supplied with statistics for each village they would be able to localize and set right any marked deficiency and inequality in the supply of canal water to particular villages much more readily than they can at present. He hopes to be able to make arrangements for the supply of this information in future before the completion of the Multan Settlement. It is possible that this suggestion may be of more general application.

In the Kángra district cattle disease, and especially rinderpest, appears to have become endemic. It is to be hoped that the experiments in rinderpest inoculations which are now being conducted in this Province under the supervision of the Inspector-General, Civil Veterinary Department, will prove successful in the suppression of this disease.

In the Umballa district the Revenue Assistant reports that the percolation and flooding from the Western Jumna Canal above Dádupur have caused a gradual deterioration of land in its neighbourhood from water-logging. The flooding may perhaps be remedied by raising and strengthening the banks and percolation by a drainage cut. Also in the Naili Circle of the Kharar Tahsíl, some villages are said to have deteriorated from over irrigation.

In the Hissár district the deepening of the Ghaggar by natural causes and of the Rangoi by excavation have deprived the neighbouring villages of the benefits of inundation which, when there is rain, have been relied on to fertilize the soil. It is reported, however, that the Canal Department are engaged in making further canal works, the effects of which must be seen before any decision can be arrived at. The spring level adjoining these rivers is also not more than 40 feet below the surface, and the construction of wells by *takávi* loans is receiving the attention of the District authorities.

Similarly in the Gujránwála and Jhang districts it is reported that since the opening of the Chenáb Canal the *sailáb* areas of several villages down the weir have deteriorated owing to the cessation of floods from the river. It is suggested that some good might be done if the canal were closed for a week or two during the heavy rains of the monsoon. In the Jhelum district the riverain lands are often infested with rats which honey-comb the land to such an extent that it is impossible to ride over it and what would otherwise be fertile *sailáb* land produces very little.

Persistent failures.

12. *Persistent failures* are defined as failures due to causes or defects of a more or less persistent character, and requiring prolonged investigation. In this class may be placed the deterioration due to sand drifting and the action of *chos*. The former can be met to some extent by planting sand binding grasses and reeds of which the *bindpúla* is an example. Planting of *bindpúla* has been tried in parts of the Karnál and Ludhiána districts. Unfortunately, in the Umballa district the interest in the subject has declined owing to the want of union among the land-owners.

In regard to the *chos* the Provincial Legislative Council has under consideration the Punjab *Chos* Bill which will, it is hoped, enable the matter to be effectively dealt with. Saline efflorescence appears to be increasing in the Rávi Bet villages of the Lahore district, in the Muzaffargarh district and in the Pind Dádan Khan tahsíl of the Jhelum district. The spread of *shor* in the Rávi Bet is alleged to have commenced since the opening of the Bari Doáb Canal caused a decrease in the river floods. On the other hand, in Muzaffargarh the spread of saline efflorescence is thought to be due to excessive percolations. The floods of 1893, which washed nearly the whole of the district, is believed to have brought a quantity of salt with it, and turned a considerable area of good land into *shor*, and rendered part of it unfit for cultivation. In some parts this defect has been remedied by constant manuring and watering from canals, but in others the land remains unfit for cultivation. The floods in fact interfered with the subsoil drainage, and the soil has become water-logged. The subject is under consideration. In the Pind Dádan Khan tahsíl a scheme for extending canal irrigation from the Municipal canal through

the worst *kalar* tracts is under contemplation, and if carried out it will be seen how far it proves effective in removing *kalar*. Both in Gujránwála and in Muzaffargarh canal irrigation with rice cropping for 3 or 4 years has been effective in reclaiming some kinds of *kalar* land.

In Pesháwar and Kohát the most general agricultural defect is due to the character of the agriculturists, who are described as lazy in their habits and apathetic in their attitude towards agricultural improvements. In their agricultural practices they are considerably behind the agriculturists of the central districts of the Province. This is a matter which can only be cured by gradual education.

Pesháwar also affords a field for enquiry in regard to the injury caused to crops by weeds, birds and insects.

It will be seen from the above remarks that there are many subjects for further enquiry which have been brought to light either by examination of the land revenue records or by the personal observation of district officers. Separate files will be prepared in this office regarding the agricultural defects of each district, and as similar files will, of course, exist in the district office every new Deputy Collector or Settlement Officer coming to a district will at once have before him the result of the observations of his predecessors.

CHAPTER IV.

SCIENTIFIC AND NATIONAL ENQUIRY UNDER IMPERIAL DIRECTION.

Geography.

13. During the year under review the Himalayan Party No. 18 of the Survey of India carried on the 4-inch topographical survey of 156 square miles in Kángra and the 2-inch survey of 362·2 square miles in Suket, the Simla Hill States and Hoshiárpur, and of 259·8 square miles in Sirmur State with classification of forest growth. The work of triangulation of 315·0 square miles in Hoshiárpur preparatory to the detailed survey was also completed.

Geology.

14. The annual mineral return for the Punjab was revised during the year after making detailed enquiries from the different districts. The information so obtained is incorporated in the general review prepared by the Reporter on Economic Products, and need not be repeated in this report. No new mineral industry was started during the year, and there has been no new geological survey of any part of the Province.

Botany.

15. There is nothing to record this year in connection with this department of science except that an enquiry has been commenced regarding the different forms of *dioscorea* (yams) met with, whether wild or cultivated.

Meteorology.

16. A new rain-guage has been placed at Lyallpur and at Fort Lockhart, and the rain-guage at Khushálgarh has been abolished. The rainfall data of the canal rain-registering stations are collected by that department. The civil stations are usually in charge of the tahsíl office kánúngos. They are inspected from time to time by the local revenue officers, and by the Director of Land Records; the results of these inspections are submitted on a prescribed form on post-card to this office and to the office of the Meteorolgical Reporter to Government of India. In addition to the monthly rainfall returns this office receives rainfall data of rain-registering stations by telegram from 13 selected districts, which number has now been increased by six owing to the necessity of having full information regarding the condition of those districts which are suffering most severely from the drought. These reports are compiled and summarised in this office, and published in the local *Gazette*.

17. The Reporter on Economic Products as usual sent a list of articles to be collected in 1898-99 for the Indian Museum and the Imperial Institute. The list was sent to the district officers and others, and with their assistance about 68 articles were collected and supplied during the year, the remaining articles are still in the course of collection. The department is indebted to all the officers concerned in the collection for their hearty co-operation in the work. In some cases they have furnished very interesting reports on the articles collected. Of the annual grant of Rs. 500 placed at the disposal of this department to cover the cost of collection, only Rs. 150 were expended during the year.

Economic products.

The following is a list of the articles supplied to the Reporter on Economic Products during the year :—

List of articles supplied to the Reporter on Economic Products to the Government of India during the year 1898-99.

No.	Districts from which supplied.	Names of articles.
1	Bannu	Alum crude and purified.
2	Do.	Coal.
3	Hoshiárpur	Ficus cunia (karudal) preserved.
4	Simla	Zanthoxylum alatum (bark).
5	Do.	Do. do. (fruit).
6	Hazára	Diospyros Lotus (amlock).
7	Siálkot	Dalbergia sissoo.
9	Kángra...	Solanum zanthocarpum (fruit).
10	Do.	Butea Frondosa (gum).
11	Do.	Celastrus paniculata (seed).
12	Do.	Betula bhojpatra, stems, umbrella, books and clothes made of it were supplied.
13	Umballa	Borax.
14	Do.	C. Phlomoides (arm-perum).
15	Do.	Barking deer.
16	Do.	Equisitum debile.
17	Do.	Ethynufolia (Hazardána).
18 to 25	Ludhiána	8 kinds of grasses were supplied by the Deputy Commissioner.
26 to 33	Delhi	8 articles were supplied.
34	Simla	Specimens of Zanthoxylum alatum.
35	Hoshiárpur	Ficus Roxburghii.
36 to 42	Lahore	7 articles supplied.
43 to 48	Shahpur	6 Do. do.
49 to 51	Bannu	Rock alum, crude alum and coal with iron sent second time.
52 to 60	Delhi	9 articles were supplied.
61	Jhang	Sajji plant and soda salt.
62	Dera Ismail Khan	Barilla plant.
63 to 67	Lahore Agri-Horticultural Gardens ...	5 articles sent by the Superintendent, Agri-Horticultural Gardens.
68	Ditto ditto	Pears.
	Lahore Director's Office	10 varieties of edible gums were supplied.

18. Dr. Watt, the Reporter on Economic Products, visited the Punjab during the month of September with a view to acquiring commercial exhibits for the new Economic Gallery of the Indian Museum. After visiting the principal commercial industries at

Dr. Watt's visit in the Punjab.

Lahore he explained to the representatives of the Lahore industries who had been invited to meet him at the Town Hall that the object of the commercial section of the Economic and Art Museum at Calcutta is to further the interests of Indian commerce by making the different manufacturing firms better known throughout India and inviting them to send samples of their products to the Commercial Museum. He also impressed on the meeting that it would be in the interests of the local manufacturers to have their firms represented at Calcutta, so that intending purchasers might have every facility of putting themselves in communication with the firms concerned.

Entomology.

19. Specimens of an insect which caused great damage to the sprouting wheat in a small area in the north of Tahsil Chakwál in the Jhelum district were forwarded for identification to the Superintendent of the Indian Museum. Some of the fields which were attacked by this insect were sown and re-sown twice and thrice with the same result; the insect feeds on the part of the young plants above the surface of the grounds: in the day time it burrows into the soil, and, the zamíndárs say, attacks the roots of the plants also. It proved to be a carcubonid beetle belonging to the species of *Tanymecus indicus*, which has been previously reported as attacking opium plants in the North-Western Provinces.

Instructions were received regarding the use of a fungus from South Africa which is said to have been found very efficacious in destroying swarms of locusts in that country. The Imperial bacteriologist has obtained a culture of this fungus, and he reports that he has found that it retains its vitality for a considerable period, and need not be used at once. A translation of the instructions for the use of the fungus, has been prepared in this office, and will be forwarded to Deputy Commissioners and some tubes containing the fungus will be procured. There has hitherto been no opportunity of trying it.

Veterinary Science.

20. The following account shows briefly the progress made during the year in horse-breeding operations under the control of the Civil Veterinary Department :—

(*a*) *Distribution of Imperial stallions.*—During the year 150 horse and 194 donkey stallions were employed at stud work as compared with 146 and 193 the year before, and covered 8,935 mares.

(*b*) *Selection and branding of mares.*—There are 13,570 branded mares on the Imperial list as compared with 13,072 last year; 1,448 of these were branded during the year and 116 were certificated.

(*c*) *Elimination of unfit animals from the list.*—One thousand five hundred and fifty of the branded mares were removed from the registers. Out of this number 567 had died, 651 were sold, 130 declared unfit and 41 stolen.

(*d*) *Inspeciton of stallions.*—During the year the Superintendent, South Punjab, toured through 16 districts in his circle, and inspected every horse stand with the exception of one at Muktsar in the Ferozepore district. He also attended the following horse shows and inspected the Simla, Dalhousie and Dharmsála dâk lines under the Glanders and Farcy Act :—

Hánsi.	Amritsar (Dewáli).	Jellalabad.
Delhi.	Karnál.	Kapúrthala.
Montgomery.	Multan.	Dera Gházi Khan.

The Superintendent, North Punjab, visited all the 13 districts in his charge and attended all the horse fairs and shows in his Circle.

(*e*) *Supply of District stallions.*—31 horse stallions, 65 pony and 9 donkey stallions, the property of District Boards, Courts of Wards and private persons, were employed at stud work during the year, covering 5,846 mares. For mule-breeding there were 311 coverings against 267 last year.

(*f*) *Elimination of inferior sires.*—The number of castrations made by the Imperial Veterinary Assistants and Salutries was 769 against

913 the previous year, a falling-off of 144. The number of operations by the District Board Veterinary Assistants was 778 against 967 last year.

(*g*) *Instruction in horse-breeding.*—There are several private studs for horse or mule breeding under the control of the Court of Wards, and the managers frequently consult the officers of the Veterinary Department for advice in the selection of sires. Owners of branded and certificated mares are also advised as to the best kind of stallion with which to cross the animals. The subject also forms part of the curriculum at the Lahore Veterinary College.

(*h*) *Cattle-breeding.*—During the year 22 Hissár bulls were supplied to districts from the Hissár Cattle Farm. The cost of 14 of these was defrayed by the District Board and of 8 from the Provincial Fund. The Superintendent of the Hissár farm is devoting his attention especially to the selection of suitable sires for the different classes of cattle which are found in the Province. The reports of the cattle survey of the Province which are being published under the direction of the Inspector-General, Civil Veterinary Department, will prove of the greatest assistance to this officer.

(*i*) *Investigation and prevention of horse and cattle disease.*—There were 96 Veterinary Assistants employed in the Province, 15 on the Imperial staff, 4 Provincial and 77 employed by the District Boards. The scheme for the amalgamation of the subordinate Veterinary Department into a Provincial Service has been approved by the Government of India, subject to consideration with reference to the necessary financial adjustment between the Imperial and Local Governments.

The total number of reported cases of cattle disease during the year was 90,303 as compared with 59,231 cases reported in the previous year. But the percentage of mortality was less than in the preceding year, being 10·1 as compared with 17·9. There were 54,193 reported cases of foot and mouth disease, 6,427 of rinderpest, 3,012 of anthrax and 26,671 of other cattle diseases. The highest mortality was due to rinderpest with 57·3 per cent. of deaths, and anthrax with 89·3 per cent. of deaths.

There are 10 fixed dispensaries for the treatment of cattle disease; 3 in the North Punjab Circle and 7 in the South Punjab Circle; and also 7 itinerant dispensaries in the South Punjab. In the fixed dispensaries 15,319 patients were treated as compared with 13,041 in the year previous. The Assistant to the Inspector-General, Civil Veterinary Department, continued the investigation into cattle breeding and cattle diseases in the Punjab, and an interesting report on the cattle of the Jhelum, Ráwalpindi and Hazára districts has been published. It has been decided that on account of the present scarcity of supplies and fodder, the bacteriological survey of the Punjab shall be discontinued for the present season, and that the work carried on under Imperial direction shall be confined to the investigation of rinderpest inoculations.

There was a serious outbreak of glanders on the Ráwalpindi-Srinagar road, and two special posts of observation were established, under the superintendence of the Veterinary Superintendent, North Punjab. The usual inspection of the ponies on the several tonga services in Punjab was carried out. The mallein treatment was successfully employed in diagnosing several suspicious cases as due to glanders. Two ponies on the Kálka-Simla tonga service which were found to be suffering from glanders were destroyed; and what might have proved a serious outbreak on this important line of traffic was averted. Arrangements have also been made for the systematic inspection of the Lahore Post Office horses by the Veterinary Officer employed as Professor of the Lahore Veterinary College. If possible, also there will in future be a systematic inspection of the horses in dealers' yards both at Lahore and Amritsar. It is necessary to have some such general inspection in order

to check the spread of glanders which has been prevalent during the last year. The horse dealers, as a rule, quite understand the value of the preventive measures taken to suppress the disease; and if the inspection is carried out judiciously and under the careful supervision of the Veterinary Officers there will be no difficulty about it. The staff is, however, at present rather short-handed for its multifarious duties, and cannot easily do more than is done in the way of inspections until the subordinate staff is brought under the supervision of the third Superintendent whose appointment is contemplated.

Agricultural science.

21. Specimens of the Punjab food grains grown in the autumn have been forwarded to the Agricultural Chemist to the Government of India for chemical examination. The Agricultural Chemist at the request of this department also examined a specimen of date sugar prepared by Mr. Pathak, a gentleman of the Umballa district, who is making experiments in the manufacture of sugar from the date palm. By the desire of the Government of India samples of the best Punjab wheats were forwarded to Mr. Farrer, of New South Wales, who is engaged in cultivating cross-bred Indian and Fife and other wheats with the object of obtaining a variety of superior milling qualities. A large number of cross-bred varieties received from this gentleman were sown in the Agricultural Gardens at Lahore, and the seed of 20 of the varieties which seemed to be the most promising has been used for further experimental sowings so as to obtain an acclimatised variety.

Statistics.

22. It has been decided during the year that a forecast should be submitted regarding the sugarcane crop. No further change in regard to the statistics supplied to the Director-General of Statistics has to be reported.

Forestry.

23. There is nothing to report from this department this year in regard to this branch of science.

CHAPTER V.

SCIENTIFIC AND LOCAL ENQUIRY UNDER PROVINCIAL DIRECTION.

Experimental farms.

24. It is hoped that some arrangements may be made with the Municipality of Lyallpur in the Chenáb Colony to utilize part of the farm lands now under the control of the Municipality for experimental purposes. The present space available for experiments attached to the Agri-Horticultural Gardens at Lahore is only about 3 acres, and quite insufficient for the purpose; moreover, the soil is hard and unsuitable for many crops.

The Bruceabad farm.

25. The report of the Bruceabad farm under Government management is attached to this report as Appendix A. It is not an experimental farm, and the information obtained regarding the amount of crops grown is probably not so useful for statistical and assessment purposes as that obtained by the other crop experiments, which since 1893 have been carried on every harvest in each district. These crop experiments are undertaken to ascertain the actual outturn of wheat, gram, barley and other crops on irrigated and unirrigated land on average plots of $\frac{1}{40}$ acres each. The experiments are carried out by the ordinary District staff.

Work done during the year.

26. The experiments which are at present carried out in the Lahore Agri-Horticultural Gardens are described in the annual reports of that institution. Seeds of selected varieties of American Indian corn, Palestine wheat, Government, Cape, Chevalier, and chocolate barley, and five varieties of cotton seeds including Garo Hills and Egyptian cotton seeds were distributed to several District Officers and independent gentlemen. The white field Indian corn appears to give the best result in district cultivation. The Garo Hills' cotton may prove a useful staple, but none of the

crops this year were very successful, owing to the unfavourable season. The Egyptian cotton gives a long staple, but it is believed to be weak. The problem of inducing the cotton plant to flower earlier so as to avoid the autumn frosts is one which has much practical interest in the Punjab, as in the case of almost all experimental cultivations it has been reported that the crop was injured or lost by frost. The country variety also is frequently injured by the autumn frost. As regards the acclimatised Indian corn, as the result of the experimental sowings in the Lahore Gardens, it has now been demonstrated that early sowings in the middle of April give a much better result than those made in June. This conclusion will be brought to the notice of those officers and gentlemen who are carrying on independent experiments.

Experiments were commenced in 1898 with the sugar beet. The Cawnpore Sugar Works Company have successfully grown sugar beet-root up to the average on the Continent of Europe, and their experiments appear to indicate that it can be grown successfully in certain parts of India. As stated by this firm, the point of most importance in the experiment is that if beet can be grown in lands equal in quality of soil to the fields usually put under sugarcane cultivation and yields a like return in sugar as regards net salable value it will pay the cultivator better than cane, as the fields in the case of beet is only under crop for six months, and those the cold weather months, during which time less irrigation is needed than in the summer. The first experiment made in this Province in the Hazára district was not successful. The seed was obtained from Paris, and the failure must have been due either to the climate or to the method of cultivation adopted. The roots grown at Hazára were badly shaped, unsound and badly developed, and contained only a small percentage of sucrose. A further supply of seed has now been obtained from Paris and distributed to several gentlemen who have consented to experiment with it. A note of instructions as regards the manuring and cultivation of the plant has been supplied to them, and it is hoped that the experiment may be more successful.

The date-palm.

No further sowings of date-palm seeds or offsets have been made during the year. The Egyptian dates sown in 1889 in the Ferozepore district have been successful; and are now beginning to fruit. Some Arabian dates sown in the Sialkot district in the same year are also doing well. The experimental sowings in Gurgáon, Karnál, Hoshiárpur, Ráwalpindi, Pesháwar, Bannu and Dera Gházi Khan have proved only a very partial success if not a failure. The scientific cultivation and fertilization of the date-palm as practised in Oman and Busrah is quite unknown to the people of this Province. Date cultivation is there a most important and profitable industry; and it is one which, I venture to suggest, should be placed on a more scientific basis in India; but to do this the assistance of the Forest Department with perhaps at first the aid of a native expert from Busrah is required, and I think that plantations should be tried on a large scale in one or two selected areas where proper treatment can be given to them.

Fruit trees.

The Punjab Government continues to contribute Rs. 1,500 to the Simla Municipality for the maintenance of the Mahásu orchards; and 5,000 fruit trees, including apples, apricots, cherries, pears, peaches and plums, were received from the garden for distribution to different districts. Apricots, peaches and plums do well in the plains, the fruit from the pear trees planted in the plains is generally inferior. An orchard is, however, a luxury which can be afforded only by the well-to-do. The attempts to induce the men of the zamíndár class in Kulu to cultivate fruit trees are met with a complete apathy on the subject. The Assistant Commissioner of Kulu reports as follows in connection with a proposal to try and induce the zamíndárs to take up the cultivation of chestnut trees as a profitable investment. "It should be remembered that for more than thirty years the Kulu peasantry has seen the most superb varieties of apples, pears, peaches, plums, cherries and oranges grown in suitable localities to perfection. That they appreciate the superiority of European fruit cannot be doubted, while they evince such readiness to steal it. Yet with the exception of a wealthy Khatri or Brahmin, or some retired official or educated man, they have not shown the slightest inclination to cultivate for themselves."

CHAPTER VI.

AGRICULTURAL EDUCATION.

Normal School, Lahore.

27. The question which still confronts us in connection with agricultural education is the instruction of the teachers themselves. The teachers in the village schools are not recruited to a large extent from the non-agricultural classes; and have no traditional interest in the subject. The subject of agriculture is taught at the Normal School, Lahore, and the Director, Public Instruction, is anxious as far as possible to arrange for practical object lessons of the subjects dealt with in the text-book. The question how far the agricultural gardens at Lahore can be utilized for this purpose is under discussion, but no definite conclusion has yet been arrived at.

CHAPTER VII.

PUBLICATION OF AGRICULTURAL INFORMATION.

Agricultural information.

28. The information on the subject is given below.

(1) An account has already been given in Chapter III of the extent to which village circle books are utilized, and of some of the information communicated to this office regarding the occurrence and cause of serious agricultural deterioration A short report has been received in this office from each district regarding such deterioration as may have come to the notice of the District Officer.

(2) The system of ledgering has not actually been commenced yet; but some progress has been made by obtaining the loan, by the kind permission of the Reporter on Economic Products, of a specimen box containing information ledgered in the manner adopted in his office; and preparations have been nearly completed for the commencement of the work on the same system.

(3) The work of ledgering the information already in the office will probably take at least two years, and I do not think that with the present staff of clerks the preparation of any statistical atlas can be undertaken as well.

(4) No papers have been communicated during the year to the agricultural ledger.

(5) The following papers have been communicated to the Provincial departments of other provinces:—

Annual Report of the Department of Land Records and Agriculture.

Annual Provincial Report of the Civil Veterinary Department.

Annual Report of the Lahore Veterinary College.

Ditto do. Government Agri-Horticultural Gardens Crop Forecasts.

The papers received from other Provincial Departments were as follows:—

(1) Reports on the Department of Land Records and Agriculture.
(2) Ditto experimental farms.
(3) Ditto the Horticultural Gardens, Lucknow.
(4) Ditto Agricultural Statistics of Bengal.
(5) Trade Reports.
(6) Agricultural Ledger, Series No. 2, cotton cultivation in Berár or the Hyderabad Assigned Districts.
(7) Bulletin No. 2, note on the cultivation of black pepper in Assam.
(8) Crop forecasts.

CHAPTER VIII.

FINAL.

Notice of officers.

29. Lála Ganga Sahái acted as Personal Assistant throughout the year. He has now been selected for the post of Extra Assistant Settlement Officer in the Kohát settlement. His knowledge of detail of the revenue record system has been of the greatest assistance to me personally, and his ability and keen interest in his work have been most valuable to the department. Mr. Shroff, the Superintendent of the office, owing to an unfortunate accident to his eyes some years ago, finds that the strain on his sight renders it more and more difficult for him to carry on his duties, and he will probably be obliged to retire. He has always taken a great interest in the result of agricultural experiments, and hopes to be able to give his active attention to agriculture after his retirement.

R. SYKES, I. C. S.,

Offg. Director of the Department of Land Records and Agriculture, Punjab.

APPENDIX A.

Report on the Bruceabád Estate for the year ending 30th September 1899.

General. 1. Of the seven *mahals* which comprise the Bruceabád Estate, two, Bruceabád and Pahárpur, are situated in the Sailáb Circle near Mithankot, their harvests depending on the height of the Indus floods. Both crops this year were somewhat below average, but not to any appreciable extent. The *mahals*, Jágírs Shumáli and Janúbi, and Patti Sirkári, are in the Dhundi Circle, the last-named *mahal* being at the tail of the Dhundi Canal, and, consequently, not so well situated as the two former *mahals*. They depend entirely on their kharíf crop—in fact a rabi crop may be said to be non-existent—which was poor in the two *jágírs*, but very good in the *Patti*.

The two remaining *mahals* are the *rakhs* Ghauspur and Sohára, which this year had no crop at all, no seed being sown. It is only on exceptional occasions that these *rakhs* are cultivated: that is, when there is heavy rain in the hills, and the Chachar torrent bursts the embankments higher up. Ordinarily this torrent does not reach to these villages, which have no recorded *rod-kohi* rights.

Financial. 2. The average income for the past five years was Rs. 7,226, whilst this year the income was only Rs. 6,062. It will be seen later on in paragraph 5 that this was by reason of the prices being so low at the time of auction.

Statement No. 1 shows clearly the receipts and expenditure for the year under report; not much explanation is needed. The credit of the pound income will not figure, in future, in this account, as, since 1st April 1899, the income of the pound has been credited (by order) to Government, as other pound income is credited. The rewards to the establishment were on account of good work done by the *karáwás*. The amount of Rs. 609, still outstanding from the previous year's demand, is due from a defaulter at Dera Gházi Khan, so steps for the recovery of this amount are being taken from the Sadr Office.

Cultivation. 3. Statement No. 2 shows what areas were under crop and what areas were harvested. It will be seen that on the whole the kharíf harvest was distinctly above the average; but the rabi was just equal to the average. Comparatively only a small area was sown.

Rates of outturn. 4. The staple crops are wheat in the rabi and *másh* in the kharíf. The rates of outturn for (and practically all the cultivation of these crops is in) *saíláb* land were as below:—

Year.	Yield per acre in maunds and seers.	
	Wheat.	Másh.
	Mds. Srs.	Mds. Srs.
1896-97	5 35	4 10
1897-98	6 4	4 11
1898-99	4 0	4 5

This shows a great falling-off in the rate of outturn of wheat, which is due to the want of floods in the previous hot season.

In this circle (Sailáb) the rates of outturn on which the produce estimate was based were wheat 6 maunds and *másh* 4 maunds.

Prices. 5. The rates per maund realised at the sales of grain during the past three years were:—

Grain.	1896-97.	1897-98.	1898-99.
	Rs. a. p.	Rs. a. p.	Rs. a. p.
Wheat	3 8 0	3 5 6	2 6 0
Másh	4 10 0	4 11 0	4 5 0
Barley	2 11 0	2 0 0	1 9 0
Gram	3 1 6	3 0 3	2 3 0
Jowár	3 0 0	2 11 0	1 11 9
Sarson	4 0 0	2 11 0	2 9 0

The great fall in the price of wheat at the time of sale, it will be noticed, is the main reason for the small income of the year.

Tenants.

6. The tenants on this estate are all tenants-at-will, and have hitherto been divided into two classes. Class (A) pay, as rent, *mahsúl* one-fifth and *lichh* one-sixteenth, and ordinary *chung* (or *kámiána*) charges. Class (B) only differ from class (A) in that they pay *mahsúl* one-quarter. The former, however, have some privileges by which they are not liable to ejectment except for special defined reasons. To these tenants lately have been added a class (C) who are paying *mahsúl* one-sixth. This easier rate of *mahsúl* is a concession on account of their having brought land into cultivation, which otherwise it would have been useless to sow. As this concession is of such recent sanction, the working of this improvement cannot be reported on this year. In a year of good flood this class will *ipso facto* cease to exist.

Returns.

7. I have taken the liberty of not sending in the statements exactly in the form previously adopted. The former statements seemed to me to give little information that was necessary, and to include figures of no particular import.

Future prospects.

8. There was no flood over the *sailáb* land during the last hot weather, so that the prospect of a rabi harvest is bad. It is hoped that the *jhallárs* above alluded to may save the harvest from being a ruinous one.

The kharíf, which, at the time of writing, has already been harvested, was undoubtedly inferior. The Dhundi Canal, owing both to want of water and inadequate clearances, gave very little irrigation to the Dhundi *mahals*. The *til* crop of the *sailáb* was destroyed by a Pachádi wind locally known as "*garri.*"

RAJANPUR,
10th November 1899.

H. C. BEADON,
Assistant Commissioner.

No. 1.—*Statement of Accounts of the Bruceabád Estate for the year ending 30th September* 1899.

Cr. **Dr.**

		Rs.	a.	p.			Rs.	a.	p.
(1)	By amount brought forward unrealized 1897-98.	7,119	15	11	(1)	To amount credited to Government	10,414	15	10
(2)	By grain demand, 1898-99	4,920	10	3	(2)	To amount of local rates and cesses	430	5	0
(3)	By cash demand, 1898-99—				(3)	To amount of direct expenditure—			
	Fines ... ... Rs. 13 12 0					Advances ... ... Rs. 125 0 0			
	Fodder charges ... 381 1 2					Rewards to establishment 63 0 0			
	Grazing fees 324 4 0					Remission of seed contract 81 12 9			
	Do. (kikkar) ... 64 8 0					Miscellaneous 15 14 1	285	10	10
	Takávi recoveries ... 216 8 0				(4)	To amount still outstanding, 1897-98 demand.	609	0	0
	Pound income ... 141 2 11				(5)	To amount still outstanding, 1898-99 demand.	1,442	10	11
	Abiána fees 0 12 4	1,142	0	5					
	Total	13,182	10	7		Total	13,182	10	7

RAJANPUR:
10th November 1899.

H. C. BEADON,
Assistant Commissioner.

No. 2.—Statement showing the areas under cultivation in the Bruceabád Estate for the past four years.

Year.	Harvest.	Total.	Sown.	Failed.	Cropped.	Percentage cropped.
1895-96	Kharíf	26,442	699	81	618	88
	Rabi	...	2,217	488	1,729	78
1896-97	Kharíf	...	795	388	407	51
	Rabi	...	2,528	691	1,837	72
1897-98	Kharíf	...	760	554	206	27
	Rabi	...	3,704	1,162	2,542	68
3 years' average ...	Kharíf	...	751	341	410	54
	Rabi	...	2,816	780	2,036	70
1898-99	Kharíf	...	663	178	485	73
	Rabi	...	2,073	609	1,464	70

RAJANPUR:
10th November 1899.

H. C. BEADON,
Assistant Commissioner.

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REPORT

ON THE

OPERATIONS OF THE DEPARTMENT

OF

LAND RECORDS AND AGRICULTURE,

PUNJAB,

For the year ending 30th September 1900.

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1901

No. 36.

FROM

A. H. DIACK, ESQUIRE,

Revenue and Financial Secretary to Government,
Punjab and its Dependencies,

TO

THE JUNIOR SECRETARY TO THE FINANCIAL COMMISSIONER, PUNJAB.

Dated Lahore, 8th April 1901.

File No.

Revenue and Agriculture.

Agriculture.

SIR,

I AM desired to acknowledge the receipt of your letter No. 177, dated the 26th of February 1901, submitting the Annual Report on the operations of the Department of Land Records and Agriculture, Punjab, for the year ending 30th September 1900, and in reply to convey the following remarks of the Lieutenant-Governor,

2. The report is an interesting summary of the year's work of the Department of Land Records and Agriculture and shows a satisfactory record of progress. Many of the matters discussed in it have formed the subject of correspondence with Government during the year. Mr. Sykes, who held charge of the Office of Director for practically the whole of the year, has shown ability and zeal in his conduct of the work.

I have, &c.,

A. H. DIACK,
Revenue and Finl. Secy. to Govt., Punjab.

Punjab Government Press, Lahore—11-4-1901—310.

No. 177, dated Lahore, 26th February 1901.

From—M. S. D. BUTLER, Esquire, Junior Secretary to the Financial Commissioner, Punjab,

To—The Revenue and Financial Secretary to Government, Punjab.

I AM directed to forward a copy of a letter No. 462* of 18th February 1901, from the Director of Land Records and Agriculture, submitting the Annual Report on the operations of his Department during the year ending September 30th, 1900. The report is due to Government on March 1st, but only reached the Financial Commissioner's Office on February the 22nd, and his remarks can therefore only be brief. The reason for the delay is explained in paragraph 2 of the report. This is now the third year in succession in which the report has been delayed, and it would appear that there are real difficulties which operate against its punctual submission. The Financial Commissioner thinks that the Director should refer the question of the proposed change of date separately when it can be discussed on its merits.

*Printed with the Report.

2. The following table will exhibit in a convenient form the improvement which is gradually taking place in the educational qualifications of the Patwári Establishment :—

1	2	3	4	5	6	7	8
YEAR.	Number of Patwáris and Assistants.	TOTAL WHO HAVE PASSED					Number of Patwáris who know Hindi only
		Entrance.	Middle.	Primary.	Total.	Per cent. column 6 on column 2.	
1897-1898	8,447	93	1,729	2,629	4,451	52	4
1898-1899	8,592	87	1,871	2,694	4,652	54	10
1899-1900	8,907	98	2,160	2,741	4,999	56	4

The rise can only be regarded as satisfactory, and it will probably become more and more marked when the provincialisation of the Patwár Fund shall have made it possible to improve the prospects of the Patwáris in the poorer districts. The highest educational qualifications are to be found in the Simla, Kángra, Ludhiána, Mooltan, Siálkot and Muzaffargarh Districts. The number of agriculturists amongst the Patwáris too shows a rise from 2,398 in 1898-99 to 2,548 in 1899-1900 representing an increase in the percentage of from 28 to 29. As pointed out by the Director, this matter requires attention in the Hissar, Karnál, Ludhiána, Jhang, Siálkot, Gujrát and Gujránwála Districts. Mr. Tupper is glad to hear that it is being vigorously handled by the Settlement Officer in Dera Ismail Khan.

3. Intimately bound up with the question of the efficiency of the Patwári Establishment is the question of its prospects of promotion. The rule that two out of three Kánúngos must be promoted Patwáris has on the whole been well maintained, but no explanation is given as to why Shahpur has had to be added to the four districts mentioned last year as those in which it had been violated. Mr. Tupper understands why it should be difficult to reduce an existing high percentage, but there is no reason why it should be raised, and the attention of the Deputy Commissioner of Shahpur will be drawn to the matter. There is a

satisfactory increase in the number of Kánúngos who are agriculturists, but 34 per cent. is not a high proportion and admits of improvement. There has been a falling off from last year's figures in this respect in the Gurgaon, Delhi, Lahore and Dera Ismail Khan Districts.

4. The year has been a good one for Kánúngos. No less than nine have been permanently promoted, whereas 64 have officiated in higher appointments. Famine and plague have been responsible for 35 of these openings. The Financial Commissioner is afraid that the Director is perhaps right in thinking that Deputy Commissioners are not as careful as they might be in attending to the qualifications of their Kánúngo Staff. The matter is one of the greatest importance not only for the proper maintenance of our records, but also for the well-being of the people.

5. The Financial Commissioner agrees with the Director that there is much still to be done in improving the form of the abstract village note-book, and has recently authorized the Settlement Commissioner to take up the question for each district as it comes under settlement. The books are intended for district work, and there is no reason why they should be uniform in design. Mr. Tupper is glad to see that some District Officers have begun to use these books.

6. Considerable strides have been made during the year in inoculating for rinderpest, and the Financial Commissioner is glad to see that steps are being taken to instruct Veterinary Assistants in this important work. The matter is one closely concerning the agricultural interests of the hill districts of the Province and deserves attention.

7. Sanction has recently been accorded to the institution of an experimental farm near Lyallpur, and Mr. Tupper will watch with interest the experiments which are to be made there with the different varieties of Punjab wheat. It will probably be desirable to start a similar experiment on the Jhelum Canal.

8. Mr. Tupper considers that Mr. Sykes has been very successful as Director, and has done his work throughout the year extremely well. On several important matters Mr. Sykes has given valuable advice which has been of great assistance to the Financial Commissioner.

Punjab Government Press, Lahore—11-4-1901—310.

No. 462.

FROM

R. SYKES, ESQUIRE, C.S.,

Offg. Director of Land Records and Agriculture, Punjab,

To

A. H. GRANT, ESQUIRE, C.S.,

Senior Secretary to Financial Commissioner, Punjab.

Dated LAHORE, *the* 18*th February* 1901.

SIR,

I have the honor to submit the Annual Progress Report of this Department for the year ending 30th September 1900.

I have the honor to be,
Sir,
Your most obedient servant,
R. SYKES, C.S.,
Officiating Director of Land Records and Agriculture, Punjab.

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ANNUAL REPORT

OF THE

DEPARTMENT

OF

LAND RECORDS AND AGRICULTURE, PUNJAB.

For the year ending 30th September 1900.

CHAPTER I.

PREFATORY.

1. I was appointed to officiate as Director of Land Records on the 12th October 1899, and held charge of the appointment till the close of the year.

Tours.

2. During the year I visited the head-quarters of 13 districts, and inspected 34 tahsils. Before Christmas I was able to visit Háfizabad and Jhang; Ferozepore, Sirsa, Fatehabad; the tahsils of the Gurgáon District and Delhi. The month of January, as usual in this office, was occupied in writing the draft of the first two sections of the Land Revenue Report. Some delay in disposing of the report was unavoidable as the whole of my time of the office was occupied for 9 days in preparing an estimate of the available food stocks of the Punjab, which was required in connection with the famine administration of the Province. My own report was then taken in hand, and I was not able to resume my inspection duties till February. I had hoped that the present Departmental Report might have been submitted sooner, but again I have been called on for information required by the Horse Breeding Commission and the Indian Famine Commission, and some delay has occurred in consequence. It is unfortunate that so much time in the camping season has to be taken up in report writing, and it would be some relief if the date for the submission of the Departmental Report were postponed till the 1st June instead of the 1st March.

In the months of February and March I inspected the districts of Siálkot, Gujrát and Jhelum; and then visited Lyallpur in order to discuss the question of starting an agricultural farm there, with Mr. Leslie Jones. I was subsequently able to visit Ráwalpindi and Hazára.

During my hot weather tour in the month of July I visited the districts of Amritsar, Jullundur, Ludhiána, Ferozepore, Rohtak and Delhi.

The revenue records are on the whole very correctly written. I wish I could also say that they are neatly written. The English figure writing in the village, tahsil and district note-books is frequently very indifferent, and not to be compared in neatness with the vernacular *hindsa* (figures) formerly used; sometime, too, the ink used is so bad that the value of these records is seriously impaired.

Miscellaneous work.

3. The miscellaneous work done in the Director's Office is briefly detailed below :—

(*a*). *Budgets.*—The budgets detailed below are dealt with by the Director as controlling officer :—

Number of Budgets.—	
3—Land Revenue	(1)—Kánúngo Establishment Charges.
3—Land Revenue and 18—General Administration, Local	(2)—Patwári Establishment Charges.
VI.—Provincial Local Rates	(3)—Patwári Receipts.
1—Land Revenue, Miscellaneous	(4)—Mutation Fees.
26—Scientific and other Minor Departments	(5)—Imperial Institute. (6)—Agricultural Department. (7)—Public Exhibitions and Fairs. (8)—Agri-Horticultural Gardens. (9)—Veterinary Charges.
30—Stationery and Printing	(10)—Typography.
21—Scientific and other Minor Departments	(11)—Veterinary Receipts. (12)—Income of the Agri-Horticultural Gardens. (13)—Subscription to Agri-Horticultural Gardens from various District Boards. (14)—Contribution from Municipalities for Cattles Fairs. (15)—Fees from Horse Fairs.

These budgets, on receipt from District offices, are checked and a provincial budget statement is compiled from them in this office.

The usual check to ascertain the correspondence of departmental returns of income controlled by this office with the figures of actual receipts reported by the Accountant-General is carried out, and entails a considerable amount of correspondence ; especially is this the case in regard to receipts from the Chenáb Canal Colony. A separate report will be submitted to Government in regard to the correspondence of the treasury and departmental accounts.

(*b*). *Supply of forms required by patwáris.*—Instructions for the supply of forms required by patwáris are contained in Director's Circular letter No. 5 of 1899. Annual indents for the forms and blank paper required are received from District offices in the month of January. They are checked in this office, and the work is distributed between three printing presses in Lahore. About 15,000 reams of paper were printed or lithographed for the use of the record agency staff during the year under report. When the indents have been complied with, District officers send the contractor's bills to this office for pre-audit. The bills are checked in accordance with a schedule of sanctioned rates, and if found correct they are countersigned by the Director and returned. In this way bills to the amount of Rs. 22,106 were received in this office during the year. The amounts disallowed on various bills came to Rs. 519.

(*c*). *Patwári Stationery and Suspense Account.*—This office has also to act as a store department for the more important registers required in districts. Mapping sheets of all kinds, including English-made mapping sheets, abstract and village note-books, mutation registers and other articles, are supplied direct from this office. This important business involving the charge of stores of considerable value and the stock counts of issues and receipts has hitherto been in the charge of a clerk whose pay is Rs. 15 a month. This arrangement is not a very satisfactory one, but the work has been carefully supervised by my Personal Assistant ; and very much had been done to put the accounts in order before I assumed charge of the office. The value of the stores purchased by this office is drawn in the first instance on an abstract bill under the head "Advances recoverable from the Patwár Stationery Suspense Account." The account is adjusted annually, and the sums due from each district are recovered by book transfer in communication with the Accountant-General. The total sum recoverable during the year amounted to Rs. 11,300.

CHAPTER II.

LAND RECORD ESTABLISHMENTS.

Training of patwáris and patwári schools.

4. Schools for training patwári candidates in their duties are opened when required. They are placed under the supervision of the Deputy Commissioner's Revenue Assistanat, and an experienced kánungo of the district is selected as teacher in the school. During the year six training schools were opened in different districts and 558 candidates received training. The course of instruction lasts six or eight months, and an examination is held at the end of it. Fifty-seven per cent. of the candidates passed the examinations. In the Dera Ismail Khan District, where there is a re-settlement in progress, no patwári school was opened, but all patwári candidates received a full and practical training in the field. The Settlement Officer, Captain Crosthwaite, has paid special attention to the selection and training of candidates in this district ; and he is now able to report that there is no patwári candidate on the district list, who has not measured a village and completed its record. An examination was held and the men who have passed, 239 in number, may be considered to have a full knowledge of their work, which is a satisfactory outlook for the future administration of the district. 195 of these men belong to the agriculturist classes. The total number of patwári candidates in the Province is 3,477. Two per cent. of them have passed the Entrance Examination of the Punjab University, 53 per cent. have passed the Middle School Examination, and 40 per cent. the Primary School Examination. Only 5 per cent. of the candidates have no educational qualifications. These men are the near relatives of patwáris, and may have a preferential claim to appointments which fall vacant before the 1st January 1902. After that date the general rule will come into force that relationship of any kind to the late patwári shall confer no claim to succession to the vacant post.

Educational qualifications of patwáris.

5. The educational qualifications of the patwáris serving in each district is shown in the statement below—

1	2	3	4					5	6	7	8	9	10	11
Division.	District.	Number of patwáris and assistants.	Total who have passed					Number of patwáris with no qualifications.	Number who know Hindi only.	Number of patwáris who belong to agriculturist class.	Per cent.	Number of patwáris dismissed.	Number of patwáris reduced, suspended, fined, &c.	Number promoted to kánúngoship or given other appointments in Tahsil or District offices.
			Entrance.	Middle.	Primary.	Total.	Per cent.							
Delhi.	Hissár	312	2	81	135	218	70	94	...	42	13	6	...	2
	Rohtak	242	1	64	48	113	47	129	...	21	54	3	16	1
	Gurgáon	332	1	127	114	242	73	90	...	103	31	2	...	1
	Delhi	225	1	63	66	130	58	95	...	74	33	3	...	1
	Karnál	348	3	61	6	70	20	277	1	32	9	1	37	...
	Umballa	381	2	118	43	163	43	218	...	121	32	2	...	1
	Simla	8	...	1	7	8	100	...	...	7	88	...	...	...
Jullundur.	Kángra	315	...	37	221	258	87	57	...	231	73	...	..	...
	Hoshiárpur	481	11	124	114	249	52	232	...	193	40	2	...	...
	Jullundur	418	3	75	19	97	23	319	2	145	34	15	...	...
	Ludhiána	307	6	97	204	307	100	...	...	40	13	18	...	...
	Ferozepore	386	2	92	83	177	46	208	1	122	32	5	...	3
Lahore.	Mooltan	351	13	118	162	293	83	58	...	124	35	5	...	2
	Jhang	342	4	150	89	243	71	99	...	37	10	4	...	...
	Montgomery ...	225	1	58	89	148	66	77	...	87	38	3	...	2
	Lahore	332	3	89	...	92	28	240	...	82	25	1	5	...
	Amritsar	325	2	89	102	193	60	132	...	82	25	1	..	...
	Gurdáspur	481	6	99	77	182	38	299	...	112	23	...	...	...
Rawalpindi.	Siálkot	425	10	62	302	374	88	5 1	...	66	15	4	...	4
	Gujrát	244	2	28	40	70	29	17 4	...	46	19	1	36	...
	Gujránwála	290	3	63	155	221	76	6 9	...	23	8	6	...	...
	Shahpur	198	3	32	9	44	22	154	...	67	34	..	...	...
	Jhelum	250	6	54	23	83	33	167	...	76	30	9	2	...
	Ráwalpindi	349	2	72	78	152	43	197	...	176	50	...	...	...
Peshawar.	Hazára	138	3	22	39	64	64	74	...	46	33	1	26	...
	Pesháwar	327	...	64	164	228	69	99	...	88	27	...	...	...
	Kohát	83	...	12	41	53	64	30	...	16	20	12	...	3
Derajat.	Bannu	168	...	24	94	118	70	50	...	128	76	1	3	2
	Dera Ismail Khan ...	220	2	75	42	119	54	101	...	15	7	3	...	2
	Dera Gházi Khan ...	177	1	39	51	91	51	86	...	62	35	2	...	1
	Muzaffargarh ...	227	5	70	124	199	87	28	...	84	37	3	...	...
	Total ...	8,907	98	2,160	2,741	4,999	56	3,904	4	2,548	29	105	125	25

As old patwáris are retired and new men appointed a gradual improvement takes place in the educational qualifications of the whole staff. The percentage of patwáris with some educational qualifications is 56 this year compared with 54 last year. The number of patwáris who know only the Hindi character is now 4 only. Our present rules regarding the selection of patwári candidates prescribe that as many candidates as is found possible should be appointed from the agricultural classes. This rule has only recently come into effect, and its operation is gradually becoming apparent. Out of the total staff of 8,907 there are 2,548 patwáris who belong to the agricultural class. The percentage of agriculturists is 29, against 28 last year. The districts which are most backward in this respect are Hissár, Karnál, Ludhiána, Jhang, Siálkot, Gujrát, Gujránwála and Dera Ismail Khan. The energetic steps which have been taken by the Settlement Officer of Dera Ismail Khan to train the future patwáris of that district have already been mentioned. And as 81 per cent. of the candidates who have passed the district examination are agriculturists the disproportion of non-agriculturists which at present exists, will gradually disappear. The main difficulty which is said to exist that there are very few agriculturists who attempt to obtain an education has been surmounted in Dera Ismail Khan by giving the candidates an excellent practical training for their duties. In the Ludhiána District the candidates for patwári appointments now include a large proportion of agriculturists, and there is a fair proportion of such candidates in Gujrát, Gujránwála, Jhang and Siálkot. In Karnál there are only 7 agriculturist candidates out of a total of 145; the attention of the Deputy Commissioner will be drawn to the fact that if possible more men from the agricultural classes should be selected.

Prospects of patwáris.

6. Twenty-five patwáris were promoted to the posts of kánúngos and other tahsil offices, such as Siáha Návís and Wásil Báki Navís during the year under report. The Settlement Officer of Dera Ismail Khan remarks that so long as the Siáha Navís is expected to know a certain amount of English it is very difficult to fill this post from the patwári establishment. The chief difficulty however lies in the fact that a first grade patwári who may be obtaining a salary of Rs. 14 per mensem besides mutation and copying fees may not care for the appointment of a tahsil Siáha Navís on Rs. 15, even though it is pensionable, while his own appointment is not pensionable.

Kánúngos' Examination.

7. Four examinations of candidates for the post of kánúngo were held at different centres during the year. There were 306 candidates for examination, of whom 236 or 77 per cent. were successful, but 27 of these are still subject to re-examination in one subject. Thirty-eight of the candidates belong to the Native States of Alwar, Bhartpore and Kashmír. One hundred and fifty-two certificates of efficiency were granted in all during the year to the candidates certified to be duly qualified under Rule 104 (*ii*) and (*iii*) of the Patwári and Kánúngo Rules. The number of qualified candidates is at present sufficient in most districts of the Province.

Constitution of the kánúngo staff.

8. The constitution of the kánúngo staff in each district and division during the year under report is shown in the table given below. 34 per cent. of the kánúngos belong to the agricultural class, compared with 30 per cent. last year.

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1	2	3	4		5		6		7
Division.	District.	Total number of kánúngos.	Number of kánungos who belong to agriculturist class.		Direct appointments under rule 104 (*iii*).		Promoted patwáris under rule 104 (*ii*).		No. of kánúngos in active service without certificate of efficiency.
			Actual.	Per cent.	Actual.	Per cent.	Actual.	Per cent.	
Delhi.	Hissár	22	4	18	2	9	20	91	...
	Rohtak	16	3	19	...	...	16	100	...
	Gurgáon	21	7	33	11	52	10	48	...
	Delhi	16	6	37	8	50	8	50	...
	Karnál	22	3	14	...	...	22	100	...
	Umballa	23	3	13	1	4	22	96	...
	Simla	1	1	100	...	...	1	100	...
Jullundur.	Kángra	25	22	88	6	24	19	76	...
	Hoshiárpur	26	12	46	3	12	23	88	...
	Jullundur	20	5	25	3	15	17	85	...
	Ludhiána	20	3	15	3	15	17	85	...
	Ferozepore	23	12	52	2	9	21	91	...
Lahore.	Mooltan	23	...	...	4	17	19	83	...
	Jhang, including 10 of colony	33	13	39	2	6	31	94	6
	Montgomery	19	9	47	10	53	9	47	...
	Lahore	21	2	9	2	10	19	90	...
	Amritsar	16	4	27	2	7	14	93	...
	Gurdáspur	24	8	33	3	12	21	87	...
Ráwalpindi.	Siálkot	25	9	40	6	24	19	76	...
	Gujrát	15	3	20	9	60	6	40	...
	Gujránwála	22	2	9	4	20	18	80	...
	Shahpur	14	6	45	5	36	9	64	...
	Jhelum	16	4	25	3	19	13	81	...
	Ráwalpindi, including Attock	24	18	83	1	4	23	96	1
Peshawar.	Hazára	13	2	15	...	...	13	100	...
	Pesháwar	25	12	50	6	25	19	75	...
	Kohát	11	4	36	...	...	11	100	1
Derajat.	Bannu	16	7	44	3	19	13	81	...
	Dera Ismail Khan	20	4	20	3	15	17	85	...
	Dera Ghási Khan	17	13	76	3	18	14	82	...
	Muzaffargarh	18	6	33	4	22	14	78	1
	Total Province	607	207	34	109	18	498	82	9

In the districts of Gurgáon, Delhi, Montgomery, Gujrát and Shahpur the rule that at least two out of every three vacancies should be given to accepted candidates who are patwáris, has not been fully observed in the past, and the proportion of kánúngos who have not passed through the ranks of patwáris is higher than the standard of one in three. In Gujrát and Montgomery the number of kánúngos who have received direct appointments was increased by the appointment of Settlement officials. The question of the appointment of such officials who though not nominally patwáris have been working throughout a settlement on practically the same duties as the regular kánúngo and patwári staff, was placed on a very satisfactory basis by the issue of a circular from the Settlement Commissioner, No. 1 of 1897, to all Settlement Officers, to the effect that in future except with the previous sanction of the Settlement Commissioner no one should be appointed kánúngo unless he is a duly qualified local candidate entered in the register prescribed by Rule 104.

Training in surveying work.

9. The course of instruction given to patwári candidates includes practical training in survey work. All kánungo candidates in districts under settlement are required to work in the settlement, and receive a thorough training in surveying and other field work. The settlement training of kánúngo candidates in districts not under settlement is also in the charge of the Settlement Commissioner. And when convenient such men are deputed for a course of practical instruction to some settlement. The same plan is adopted in the case of Naib Tahsildar candidates. The names of candidates for settlement training are selected by the Commissioner, and the Settlement Commissioner decides as to the settlement in which each such candidate is to be trained. During the year under report ten such candidates received settlement training.

Promotion and prospects of kánúngos.

10. Nine kánúngos were promoted during the year to higher appointments of a permanent nature; five of them were appointed as Naib Tahsildars, two as district kánúngos and two received appointments in the Collector's office. Besides these permanent appointments, 35 kánúngos received temporary appointments as Naib Tahsildars for famine or plague duty, 8 men were temporarily employed as Deputy Superintendents in settlements, 10 acted as district kánúngos and 11 acted in other capacities in the Collector's office. The Financial Commissioner has recently issued instructions regarding the claims of such men to promotion. In regard to the carrying out of these instructions I may say that while many District Officers pay special attention to the qualifications of their kánúngo staff, the duty of writing up their character rolls is not always done as carefully as it should be. The Deputy Commissioner's Revenue Assistant should be required to submit a careful opinion regarding the work and character of the kánúngos in the district. With this report before him, which the Deputy Commissioner will be able to correct if necessary, when he has acquired a personal acquaintance with the work of the different men, a more carefully considered report can be recorded in the character rolls than is too often the case at present. With the better prospects of promotion which are now offered to this branch of the service, it becomes more and more important that the greatest care should be made in the selection and training of candidates in the first place, and secondly that a careful record should be kept in their character rolls regarding their subsequent career, so that while the weak, inefficient, dishonest men meet the fate which they deserve, a proper selection of the best men may be made for promotion when the opportunity comes.

CHAPTER III.

UTILISATION OF LAND RECORDS.

Records of rights.

11. The basis of all our statistical returns of crops and areas is the *khasra girdáwari* and the village *jamabandi*. Special rules have been proposed by the Settlement Officer of Mooltan for the crop inspections in that district, but no change in the *girdáwari khasra* is contemplated.

In regard to the *jamabandi*, general orders have been issued from this office with the sanction of the Financial Commissioner, in order to obtain a

more correct record of transfers of shares in village common, *shámilát*, land. The method of record of collateral mortgages which has hitherto been made in a haphazard manner in the column of remarks of the *jamabandi* has also been the subject of a separate report, but no orders have yet been received. The question of the abolition of annual *jamabandis* in villages subject to fluctuating assessments or to di-alluvion rules has been under consideration, and the orders of Government in regard to it are awaited.

General orders have been issued in regard to the manner of preparation of the *báchh* lists, and the period for which such papers should be retained. Orders have also been issued under instructions from the Financial Commissioner that the patwáris' copies of the village records of expired settlements with a few exceptions should not be left in the custody of patwáris but should be retained in the tahsil record office.

Statistical note-books.

12. Special forms of village note-books have been sanctioned for the villages in the Chenáb Canal Colony. The special feature of the Colony is that Government is the landlord. The crown tenants holding, as they do, under different conditions as regards the acquisition of occupancy rights and rates of rent, frequently sub-let their land to sub-tenants. It has therefore been arranged that the village note-books in the colony shall give information regarding the different tenures of the Colonists, and of the sub-tenants holding under them, and shall show the account not only of the land revenue demand but also of the Canal demand for owners and occupiers' rates.

It has also been arranged during the year that the note-books maintained by office kánúngos at tahsils and district head-quarters shall show areas in acres instead of in the local measure of area. Patwáris already possess tables for converting local areas into acres, so that the change involves little additional labour. The improvement was introduced in the Mooltan District by the Settlement Officer, Mr. Maclagan, and was brought to the notice of the Financial Commissioner by the Settlement Commissioner.

Abstract village note-books.

13. Special forms for abstract village note-books have been sanctioned for the villages on the Chenáb Canal, and for the Jhelum District. The present form of abstract note-book gives no information regarding the extension of canal irrigation or the working of the existing system of irrigation. The form suited for the Jhelum District would not prove useful in Mooltan, and the Mooltan form would not suit the conditions on the Chenáb Canal. The Settlement Commissioner has been good enough to supervise the revision of the form of abstract note-books in the districts mentioned, and he has suggested that the form of abstract note-books in each district should be revised, if necessary, whenever the district comes under settlement.

The Commissioner of Lahore, Mr. Clarke, is afraid that the new abstract note-books are not likely to prove as useful as was anticipated. He thinks that they are unnecessarily clumsy for one thing, and when one is familiar with the village note-books, it is not easy to get all the information one wants from them. The best form of abstract note-book to make it useful as a book of reference has certainly not yet been devised, and as noted above one form cannot be adapted to meet the requirements of each district. On the other hand the policy which has been laid down of keeping some record which will show whether any persistent agricultural defects have been causing a village to deteriorate, has been definitely laid down, and must be adhered to. I therefore hope that the Settlement Commissioner's suggestion to revise the present form whenever a district comes under settlement will be adopted. The consideration that the best form of abstract note-book has not yet been devised, makes it necessary to urge caution before undertaking the considerable labour of copying the Settlement Officer's notes in the existing volumes especially in districts which are likely to come under settlement in a short time. A copy of the Settlement Officer's notes has been made in the village abstract note-books in Lahore and Montgomery; Mr. Talbot has written a fairly full abstract of his assessment notes in the abstract note-books of the Jhelum District, and the question of arranging to have such notes copied in some other districts is under consideration.

The press of work in connection with famine, revenue suspensions, plague and the suppression of crime has been so severe during the year that few Deputy Commissioners have had the time to record notes in these books. Mr. Townsend, Assistant Commissioner of Gurgáon, Mr. Maynard, Deputy Commissioner of Umballa, Captain Douglas, Deputy Commissioner of Delhi, Mr. Dundas, Deputy Commissioner of Shahpur, have recorded notes about some of the villages in their districts.

Information regarding agricultural defects; occasional failures.

14. No special agricultural defects have been reported this year. Mr. Kitchen in Montgomery has been very successful in improving the condition of some villages by the construction of *bands* especially the *Mámuke Band*, and in the Shorkot Tahsil of the Jhang District something has been done to counteract the low floods by banking up branches of the river to throw the water on to the low-lying land instead of allowing it to get back into the river. In this work the Deputy Commissioner reports that Lála Shám Dás, Naib Tahsildar, has done excellent service during the year.

Gradual failures.

15. The plan suggested by Mr. Maclagan for supplying the Canal Department with fuller statistics regarding irrigation in the different villages supplied from the same branch of the canal has been under consideration with a view to its being adopted in other districts, and after communicating with the Chief Engineer it has been suggested that it might be adopted in Muzaffargarh and on the Indus Canals. A report has been submitted to the Financial Commissioner A general enquiry ordered by the Financial Commissioner into cases in which extensive failure of *sailáb* has occurred has been instituted .

CHAPTER IV.

SCIENTIFIC AND NATIONAL ENQUIRY UNDER IMPERIAL DIRECTION.

Geography.

16. During the year under report the following work was carried out by the Himalayan Party No. 18 of the Survey of India:—

	Sq. miles.
Triangulation	693·0
Detail survey on 2-inch scale of the Sirmur State forests with classification of forest growths	308·8
Detail survey on 2-inch scale in Kahlúr and Mandi States and Kángra and Hoshiárpur Districts	655·0
Detail survey on 1-inch scale in Kulu Sub-Division of Kángra ...	168·0
Forest survey on 4-inch scale	107·7
Total detail survey on all scales	1,239·5

Botany.

17. A list of botanical specimens forwarded to the Reporter on Economic Products is given under the head of Economic Products. Specimens of varieties of *jowár* (*Sorghum vulgare*) grown in Dera Gházi Khan and Umballa were also sent to the Reporter.

Meteorology.

18 During this year a new rain-gauge was established at Salháwas in the Rohtak District, raising the total number of rain gauges in the Punjab to 212. These are inspected by the Civil officers in their tours of inspections. Commissioners inspected 15 rain-gauges, Deputy Commissioners and Settlement Collectors 45, Assistant Commissioners and Extra Assistant Commissioners 10, and the Director of Land Records and Agriculture 14. The reports received from the inspecting officers show that the rain-gauges are properly maintained and that the method of measuring the rainfall is well understood by the persons in charge of these gauges.

Economic products.

19. The following is the list of the articles supplied to the Reporter on Economic Products to the Government of India during the year under report for the Indian Museum and the Imperial Institute.

No.	District from which supplied.	Names of articles.
	List of articles sent in 1899-1900 *out of Programme for* 1897-1898.	
1	Lahore	Pyrus communis.
2	Agri-Horticultural Gardens	Apium graveolens.
3	Ditto	Hibiscus cannabinus.
4	Ludhiána and Dera Ismail Khan	Setaria glauca.
5	Ditto ditto	Aristida setacea.
6	Ditto ditto	Eyuodon dactylon.
7	Ditto ditto	Andropogon sp.
8	Ditto ditto	Do. pertusus.
9	Ditto ditto	Erogrostis unioloides.
10	Ditto ditto	Cyperus sp.
11	Ditto ditto	Scirous sp. Affs. nincronotus.
12		
	List of articles supplied in 1899-1900 *out of Programme for* 1898-1899.	
1	Hazára	Aconitum napellus.
2	Kángra	Allium sphaærocephalum.
3	Do.	Andorpogon annulatus.
4	Do.	Aneilema scapiflorum.
5	Mooltan and Montgomery	Barilla.
6	Simla	Berberis aristata.
7	Montgomery	Carbonate of soda.
8	Agri-Horticultural Gardens	Ceratonia siliqua.
9	Lahore	Carum copticum.
10	Gujrát	Cinnamomum Tamala.
11	Delhi	Citrus Aurantium.
12	Agri-Horticultural Gardens	Cupressus sempervirens.
13	Simla	Datura Stramonium.
14	Delhi	Dioscorea sativa.
15	Gujrát	Diospyros Lotus.
16	Hoshiárpur	Elæodendron glaucum.
17	Gurgáon	Euphorbia pilulifera.
18	Gurgáon and Gujrát	Euphorbia Royleana.
19	Dera Ismail Khan	Ficus palmata.
20	Dera Ismail Khan and Lahore	Ficus religiosa.
21	Gujrát	Glycyrrhiza glabra.
22	Gujránwála	Laminaria saccharina (seed).
23	Do.	Lupinus albus.
24	Hazára	Myrsine Africana.
25	Kohát	Nannorhops Ritchieana.
26	Agri-Horticultural Gardens, Lahore	Nepeta ruderalis.
	List of products supplied to the Reporter in 1900, *but not included in any Programme of collections.*	
		Oil and otto.
27	Delhi	Jasminum grandiflorum.
28	Do.	Do. Sambac.
29	Do.	Rosea.
30	Do.	Mumusops elengi (otto).
31	Do.	Muchelia champaca (otto).
32	Do.	Lawsonia alba (otto).
33	Jhelum	Rose water.
		Edible gums—9 varieties.
34	Amritsar	Mangifera Indica.
35	Do.	Acacia Arabica.
36	Do.	Acacia modesta.
37	Do.	Anegcissus latifolia.
38	Do.	Cochlosperum gossypium.
39	Do.	Moringa pterygosperma.
40	Dera Gházi Khan...	"Chichhra" or "kamarkas."
41	Do.	"*Dhakki*" or "chota kikar."

The gums obtained from the Punjab were forwarded by the Economic Reporter to England, where their value for confectionery purposes was tested by Messrs. Rowntree of York. The report received is to the effect that the gum known locally in the Amritsar bazaar as *dhakki* is the most suitable for this purpose. It is understood that this is the gum of the Acacia jacquemontii and further enquiries are being made in regard to it.

I am indebted to District Officers and to the Conservator of Forests for assistance in obtaining specimens required for the Indian Museum. The programme of collections known as the Programme for 1898-99 is not nearly completed yet, and further efforts will be made to continue the collection.

Geology.

20. The annual returns regarding the outturn of iron, petroleum, and gold ores have been submitted. Gold is produced in small quantities in the Jhelum and Ráwalpindi Districts. The amount of iron ore produced from the Simla District is small. The petroleum wells in Ráwalpindi and Bannu produced 1,104 gallons of oil. There were three coal mines in work in the Jhelum District, but one of them, the Baghanwála Colliery for coal work was closed at the beginning of the year 1899.

Entomology.

21. Specimens of diseased *másh* (*Phaseolus mungo var. radiatus*) were forwarded to the Reporter on Economic Products. The disease caused considerable damage to this crop in the riverain tracts of the Jhang District and is locally known as *teli*. It had the appearance of a black fungus over the stems and leaves of the plant. The specimens were forwarded to Kew, and it was found that the disease was primarily due to the presence of some honey dew secreting aphis or similar insect on the plant. The black fungus which was present on the plant is known as *sooty* mould, and is a species of Capnodium asaprophyte feeding on the honey dew. It was reported that the injurious action of the fungus was entirely physical, due to its covering up the chlorophyll from light. A spray of an emulsion of soft soap and paraffin was recommended to clear the plants of the aphis.

White ants, as usual in a dry year, caused injury to some crops, especially to the young sugarcane cuttings in the Siálkot District.

Much injury was caused to the sugarcane crop in the Jullunder District by some sort of borer insect, probably the larva of the borer insect, Diatrœa sacharalis. An insect of a similar nature also caused damage to maize and *chari* (great millet) in Lahore and Ferozepore.

In the Mooltan District enormous damage was caused last autumn by the attacks of a small caterpillar which eats the flower and boles of cotton. Specimens of the larvæ were forwarded to the Economic Reporter, who stated that from the characteristics reported, the insect appears to resemble Heliothis armigera, which is a well-known pest in America. Unfortunately I have not succeeded in obtaining a specimen of the imago to enable the Economic Reporter to identify the pest definitely. The only remedy that I have been able to suggest is careful autumn ploughing to break up the pupæ and so prevent the pest from recurring next year.

The Forest Departmental Report for 1899-1900 refers to the fact that in parts of Montgomery the growth of *jand* coppice shoots (*Prosopis spicigera*) has been impeded by the ravages of a hemipterous insect which has been determined as Ceratopachys variabilis.

Tubes containing cultures of the locust destroying fungus have been procured from the Imperial Bacteriologist. There has not hitherto been an opportunity of trying this fungus.

Veterinary Science.

22. The following brief account of the progress of horse-breeding is given in compliance with paragraph 13 of the Resolution of the Government of India No. $\frac{18}{54}$, dated 25th May 1892:—

(*a*) *Distribution of Imperial Stallions.*

Horses.—There were 182 Imperial stallions on the register on the 31st March 1900, of which 141 were employed on stud work during the year. The number of mares covered was 7,269 against 7,827 covered in the previous year.

Donkeys.—Two hundred and seventy-nine donkey stallions were on the register on the 31st March 1900. Out of these 209 were employed on stud work for mule breeding and covered 14,214 pony mares. There is no prejudice now against mule breeding except in Kohát and some other parts of the frontier.

An endeavour is being made to improve the breed of native donkeys. The Government of India have agreed to the purchase of 50 stallions for this purpose. These animals will be placed in the charge of zaildárs or lambardárs. District Boards have agreed to defray the cost of keeping them.

(*b*) *Selection and branding of mares.*

There are on the Imperial list 13,191 branded and 101 certificated mares against 13,570 and 116 mares respectively in the past year.

(*c*) *Elimination of unfit animals from the list.*

2,234 branded mares were struck off the register. Of these 831 died, 1,000 were sold, 70 were stolen and 330 were declared unfit.

(*d*) *Inspection of Stallions.*

The Superintendent, South Punjab, toured through 16 districts in his circle and inspected every horse stand except the one at Rupar in the Umballa District. He visited the veterinary dispensaries at Amritsar, Hoshiárpur, Umballa, Rohtak, Ferozepore, Ludhiána and Jullundur, and attended the horse shows held at Amritsar, Rewári, Sirsa, Hánsi, Jallálabad, Kapurthala, Mooltan, Dera Gházi Khan, Umballa and Ráwalpindi. He also inspected the ponies on the tonga services to Simla, Dharmsála and Dalhousie.

The Superintendent of the Civil Veterinary Department, North Punjab, visited every district of his circle and attended the following horse shows :— Jhang, Shahpur, Lahore, Gujrát, Ráwalpindi, Amritsar (Baisákhi), Eminabad local horse show, and Dera Gházi Khan. He also inspected the dâk lines, Ráwalpindi to Srínagar, Hassanabdál to Abbottabad, Khushálgarh to Kohát, Kohát to Dera Ismail Khan, Dera Ismail Khan to Tánk, and Toba Tek Singh to Jhang; and took steps to check a serious outbreak of glanders on the Ráwalpindi-Srínagar line.

(*e*) *Supply of District Stallions.*

Horse and Pony Stallions.—Thirty horse stallions and 69 pony stallions belong to District Boards, of which 29 horses and 67 ponies were employed on stud work.

The District Board horses and ponies covered 5,925 mares against 5,680 last year. Private stallions, the number of which is only three, covered 118 mares, as compared with 166 last year.

Donkeys.—District Boards employed 6 donkey stallions which covered 220 pony mares against 311 last year.

Elimination of inferior sires.

The number of castrations by the Imperial Veterinary Assistants and salutries was 673 against 769 and 913 in the past two years. The number of operations done by the District Board Veterinary Assistants was 673, the same as last year. 1,451 stallions were castrated by the Veterinary Assistants during the year. Considering that the year was one of famine, the number of castrations of colts is satisfactory.

(*g*) *Instruction in Horse-breeding.*

The selection of a sire likely to give the best result with a particular mare is a difficult matter to control. The policy in the Punjab in late years has been to lay a good foundation for future breeding with the Arab, and follow by crossing the progeny with the thorough-bred. A system of branding to show by the brand what sire the mare should be put to, has been introduced tentatively, and it is hoped that it may have good results. The stallions are in the charge of syces who have received some training in the management of coverings. The attention of Deputy Commissioners has been drawn to a Manual on horse-breeding by Veterinary Captain Pease, and to a Primer regarding the management and treatment of brood mares issued by the Official Press at Meerut. The officers of the Civil Veterinary Department give assistance in selecting the stallions purchased by District Boards.

(h) Cattle-breeding.

During the year 40 Hissár bulls were supplied to districts from the Hissár Cattle Farm. Some prizes for cattle are offered by Local Bodies at the larger fairs, especially at the Amritsar and Jalálabad Fairs. Proposals for systematizing the grant of prizes at fairs for good cows and bulls are under consideration.

(i) Investigation and prevention of horse and cattle disease.

The work done by the Veterinary College of the Punjab at Lahore forms the subject of a separate report. This College is the training ground for all Veterinary Assistants, of whom several are employed by District Boards in nearly every district in the Punjab. The direct supervision of the staff of Veterinary Assistants, still remains with the District authorities, but the two Superintendents of the Civil Veterinary Department in the North and South Punjab Circles receive reports of the work done by the Assistants, inspect the veterinary dispensaries in their charge, and, as far as possible, exercise a professional supervision over them. The Government of India have agreed to the proposals to amalgamate the District Board Veterinary Assistants, of whom there are 119, with 39 Assistants employed in the Punjab under the Imperial Government, and 4 Provincial Assistants. The amalgamated staff will form a Provincial service and will be placed, it is hoped, eventually under the executive control of a third Superintendent. It has not yet however been possible to appoint an officer to fill this post. A report has recently been submitted to Government in regard to the possibility of introducing the amalgamation scheme immediately.

The total number of reported cases of cattle disease during the year was less than in the previous year, but the percentage of mortality was higher. The number of cases reported was 64,449 with a mortality of 25·62 per cent., compared with 90,303 cases in the previous year and a mortality of 10·1 per cent. The present year, marked as it has been by an unprecedented fodder famine, has left the stock of cattle much reduced in number and with little stamina to resist the ravages of disease. There were 21,327 reported cases of rinderpest with a mortality of 54·96 per cent., and 3,004 cases of anthrax, the mortality in which was 66·81 per cent. The outbreak of rinderpest was very severe in the Simla Hill States and in Kángra. In the Hill States measures were taken by the Deputy Commissioner of Simla to prevent diseased cattle coming into Simla by the establishment of posts. Inoculations for rinderpest were successfully performed in the Roru Tahsil of the Bashahr State, by the Assistant to the Inspector-General, Civil Veterinary Department; the people brought their cattle to him in great numbers. The Inspector-General has suggested that Veterinary Assistants should be deputed to the bacteriological laboratory for training in rinderpest inoculation, and this suggestion has been readily accepted by District Boards.

No new veterinary dispensaries were established during the year. The total number of such institutions at present in the Province is 10. They are managed by the District Boards with the exception of the Amritsar Dispensary, which is under the management of the Municipal Committee, and have proved very useful institutions when carefully worked. The dispensaries at Amritsar and Siálkot especially are very popular.

Agricultural science.

23. Dried specimens of the fodder crops grown in the Punjab have been sent to the Agricultural Chemist to the Government of India, at his request, for chemical examination.

Statistics.

24. It has been decided during the year that separate figures should be shown for rapeseed crops in future in the returns sent to the Statistical Department of the Government of India. No further change in regard to the statistics supplied to the Director-General of Statistics has to be reported.

Forestry.

25. The annual Departmental Report on the Forest Administration of the Punjab for the year 1899-1900 has been issued by the Forest Department. There is nothing to report from this Department this year in regard to this branch of science.

CHAPTER V.

SCIENTIFIC AND LOCAL ENQUIRY UNDER PROVINCIAL DIRECTION.

Experimental Farm.

26. Proposals for starting an Experimental Farm at Lyallpur were submitted during the year. The proposal is that two squares of land numbered 26 and 27, which form part of a larger area of about 20 squares, at present under the management of the Municipality of Lyallpur, should be utilized as an Experimental Farm. The Agricultural Chemist to the Government of India has analysed samples of the soil and he reports that there is abundance of lime, both as carbonate and in other forms; the amount of phosphoric acid is also distinctly high. The amount of nitrogen is low, as it is in most Indian soils. The amount of sulphuric acid is not high, and it will be of interest to see whether gypsum has any marked effect on crops. The amount of potash, and also that which is readily available is unusually high. Generally this soil is unusually well off in most respects. The amount of "*reh*" salts is quite trifling and not sufficient to do any serious harm. I have suggested that the primary object of the farm should be the study of the different varieties of crops especially of wheat, which exist in the Punjab.

Work done during the year.

27. The following statement shows the result of various experiment made during the year with foreign varieties of wheat barley, maize, oats, sugar-beets and sweet potatoes.

List of Experiments made during the Agricultural year 1899-1900.

*	Name of variety.	Outturn per acre in seers.		Remarks.
		Grain.	Straw.	
	Wheat.			
Settlement Officer, Mooltan	"Palestine" ...	652	832	.....
	,, ...	367	417	Sowings made in time, but there was no rain; outturn average.
Colonization Officer, Lyallpore.	,, ...	803	914	Ploughed 9 times, moderately manured, damaged by dust storms. Straw was therefore heavier than grain.
Father Felix, Lyallpur Colony.	,, ...	622	...	Height of crop 4 feet. No winter rains; crop ripened too soon.
		432	1600	Height of crop 3½ feet.
Pundit Daya Kishan, Gujránwála.	,, ...	246	389	Most of the seed was eaten by ants. Land not sufficiently watered.
		267	454	Ditto.
Deputy Commissioner, Dera Gházi Khan.		602	336	.....
		314	384	Crop neglected by cultivators for some days and hence the decrease.
	Barley.			
Deputy Commissioner, Hissár.	"English Chevalier"...	28¾	115	Land not sufficiently watered, hence outturnpoor.
	"Government" barley.	576	960	Land of good quality, hence av erage produce.
	,,	166	192	Crop sown too late, land not watered in time, outturn poor.
	,,	96	120	Ditto.

List of Experiments made during the Agricultural year—1899-1900—concld.

	Name of variety.	Outturn per acre in seers.		Remarks.
		Grain.	Straw.	
	Barley—concld.			
Deputy Commissioner, Hoshiárpur.	"Government" barley	204¼	511	Deficient rainfall affected the produce.
	,,	68¾	66¾	Ditto.
	"Cape"	247	681½	Ripened 15 days before the "Government" barley.
	,,	61	63¾	Deficient rainfall affected the crop.
Settlement Officer, Mooltan	"Government" ...	361	200	Sowings made in time, outturn average.
	,,	353	412	Land good, Ditto.
	"Selected"	357	657	Land of good quality, crop remained in good condition and received no damage.
	,,	75	67	Sufficient pains not taken in cultivation, outturn below average.
The Colonization Officer, Lyallpur.	"Government" ...	377	647	Ploughed 7 times and moderately manured. Damaged by dust-storms, straw therefore more than grain.
	"Chocolate"	539	719	Ditto.
	"Government" ...	809	503	Ploughed 7 times, not manured, but prepared; gave good outturn.
	"Chocolate"	862	575	Ditto.
Father Felix	"Government" ...	280	1,040	Height between 4 and 5 feet. No winter rains, crop ripened earlier.
	"Cape"	288	1,024	Ditto.
	"English Chevalier"...	320	1,280	
	"Selected"	373	1,547	
	"Chocolate"	533	2,133	
Pandit Daya Kishan, Gujránwála.	"Government" ...	440	720	Watering irregular on account of frequent closure of canal. Outturn average. Land not of high quality.
	"Cape"	424	440	Ditto.
	"English Chevalier"	352	440	Ditto.
	"Selected"	448	440	Ditto.
	"Chocolate"	288	440	Ditto.
Settlement Officer, Jhelum	(Name of variety not given).	117	...	Yield very poor owing to drought. Crop compares unfavourably with ordinary barley.
		266	532	Yield poor owing to drought.
		284	628	Ditto.
		458	800	Average, yield less than country *jau*.
		304	480	Very poor. Ditto.
		640	960	Yielded well. Equal to country barley.
		424	592	Average.
	Oats.			
Father Felix	"Prize cluster" ...	320	1,200	Should have been sown earlier in the middle of October or not later than the middle of November.
	"Algerian"	320	1,280	Ditto.
Pandit Daya Kishan, Gujránwála.	"Prize cluster" ...	54	212	Watering irregular on account of frequent closure of the canals.
	"Algerian"	256	320	Ditto.

List of Experiments made in the Government A.-H. Gardens, Lahore, with agricultural seeds during the year 1899-1900.

	Name of variety.	Outturn per acre in seers.		Remarks.
		Grain.	Straw.	
	Cotton.			
A.-H. Garden Report ...	"Abassi"	146 Cotton	281 Seed.	Practically a failure, due to adverse season.
	Wheat.			
	"Palestine"	410	...	Does not give satisfactory outturn, though it is of fair quality.
	Wheats (rust resisting).			
	South Australian cross-bred No. 1	800	...	
	,, ,, 3	614	...	
	,, ,, 21	307	...	
	,, ,, 25	1,018	...	
	,, ,, 40	776	...	
	,, ,, 41	1,087	...	
	,, ,, 45	1,079	...	
	,, ,, 46	1,115	...	
	,, ,, 52	1,094	...	
	,, ,, 53	578	...	
	,, ,, 54	452	...	Showed a slight trace of rust
	,, ,, 75	756	...	
	,, ,, 77	226	...	
	,, ,, 81	1,131	...	
	,, ,, 92	582	...	
	,, ,, 99	1,321	...	
	,, ,, 100	533	...	
	,, ,, 113	373	...	
	,, ,, 114	242	...	
	,, ,, 121	970	...	
	American Maize.			
	White field	388	...	
	Smedley	790	...	
	Yellow field	772	...	
	White smooth	567	...	
	Early Mastodon ...	339	...	
	Mammoth	135	...	
	Chester country ...	465	...	
	Maize.			
	Jampore	286	...	Very tall, height 12½ feet.
	Oats.			
	"Canadian welcome"	1,241	...	
	"Canadian Triumph"	637	...	
	"Bananza"	892	...	
	"Algerian"	655	...	
	"Prize cluster" ...	485	...	

List of Experiments made in the Government A.-H. Gardens, Lahore, with agricultural seeds during the year 1899-1900—concld.

	Name of variety.	Outturn per acre in seers		Remarks.
		Grain.	Straw.	
	Barley.			
A. H. Garden Report ...	"Selected"	703	...	
	"Government" ...	684	...	
	"Cape"	607	...	
	"Eng. Chevalier" ...	669	...	
	Sugar-beets.			
	Beets	3,802	roots	Contained 11·0 to 12·90 per cent. of sugar.
	American Sweet potatoes.			
	Hanover	4,753	tubers.	
	Nansemond	2,540	,,	
	Rednose	3,880	,,	

Cross-bred Australian wheats.

28. Specimens of the cross-bred Australian wheats grown in the Lahore Gardens have been sent to Mr. Farrer at his request in order to obtain his opinion as to which of them are the most suitable for further experimental cultivation.

Crop measurements.

29. The usual crop measurements to ascertain the yield of staple crops were continued in 13 districts. The outturn of 395 measured plots was reported to this office and entered in the registers which are maintained. These measurements are carried out under the supervision of an Assistant or Extra Assistant Commissioner.

Sugar-beet.

30. The manufacture of sugar from sugar-beet on a scale large enough to prove whether it would be commercially profitable is not an undertaking which I can at present attempt. The experimental cultivation of sugar-beet was commenced at the request of the Cawnpore Sugar Company. The result of the experiments so far has been uneven, the highest percentage of sugar was 13·10 per cent., while low figures 5·6 per cent. and 3·3 per cent. have also been obtained. The general result is that the roots have grown too big, and the percentage of sugar is low in consequence. Further experiments in cultivating are being tried this year in different stations. Father Felix, a gentleman with land in the Chenáb Canal Colony, is hopeful of ultimate success, and he is attempting a method of extracting the sugar which may show whether the manufacture of beet-sugar is within the compass of the ordinary Indian peasant. Judging, however, from the exceedingly expensive plant which is required for a beet-root factory in America, I am not hopeful as to the result.

Egyptian cotton.

31. Experiments have been made with Egyptian cotton in different districts since 1893. The results of the experiments were so discouraging that in 1896 it was resolved to discontinue them; but at the suggestion of Mr. Tata of Bombay it was decided to make another trial with this variety as a rabi crop. The seed was sown between October and November. In some places the plant germinated and the plants grew to the height of two or three feet but they were destroyed by frost. In Lyallpur six sowings were made between July 1897 and February 1898, under the direct supervision of the Colonization Officer, but all failed. Rai Mela Rám, Mill-owner in Lahore, sowed about 34 acres with Egyptian cotton. The plants attained a height of 7 feet, but gave a yield much below the average. The experiments made in different parts of the Province of cultivating this kind of cotton as a rabi crop have been even less successful than those previously tried of sowing it at the usual time.

Fruit culture.

32. The Punjab Government contributes a yearly grant of Rs. 1,500 towards the maintenance of the Mahásu Orchards near Simla. In return for this outlay 5,000 young trees are received from the Orchards and distributed to different districts. The trees received last year were allotted to the districts of Simla, Kángra, Gurdáspur, Ráwalpindi, Hazára, Hoshiárpur, Siálkot, Shahpur, Kohát, Pesháwar, Mooltan, the Colonization Officer and the Political Officer of Tochi.

On the whole the trees have thrived and made satisfactory progress. Seventy young pear trees planted in the Chenáb Canal Colony died, but apricots, peaches and plums have thrived.

Mr. Gollan, the Superintendent of the Saháranpur Gardens, inspected the Anandale Gardens and Mahasu Orchards at Simla, and gave a most favourable report concerning them to the President of the Municipal Committee.

The Shálimár Gardens gave a net income exceeding the expenditure by Rs. 1,488-8-6. The Shahdara Gardens show a loss on the year's working of Rs. 198-8-3. Mr. Hein, the Superintendent of the Agri-Horticultural Gardens, Lahore, has been instructed, at the request of the Deputy Commissioner of Lahore, to inspect this garden; the mango plantations appear to require some attention. No new trees were planted in this garden during the year.

The expenditure on the Delhi Gardens exceeded the income by Rs. 2,621. During the year 225 peaches, 155 oranges and 100 guava trees were planted in these gardens, in addition to 250 rose shrubs. The hedging plant *Ingo dulcis mimosœa*, which has been tried in many parts of the Punjab flourishes in Delhi. Elsewhere in the Punjab the winter appears to be too severe for it to succeed.

Date cultivation.

33. I am in communication with the Deputy Commissioners of Muzaffargarh and Mooltan in regard to the selection of suitable sites for date plantations. No reports regarding the fate of the Arabian date trees during the drought of last year have been received from District Officers, but a note has been received from Mr. Sidney Preston, Chief Engineer, on the results of experimental sowings of the Arabian date palm in the various Circles of the Punjab Irrigation Works. Generally speaking, the account given in this note is not very encouraging. The fruit is frequently insipid, and very liable to fall off before reaching maturity. The Chief Engineer writes with reference to the plantations on the lower branches of the Sirhind Canal, Ferozepore Division, that the trees grow fairly rapidly and have a thriving appearance, but that there is still something wanting appears to be conclusively proved by the inferior quality of the fruit produced, and he is doubtful whether the results attained are commensurate with the trouble which has been taken by the Canal Officers in the cultivation of the tree.

Australian salt bush.

34. Experiments with the Australian salt bush (*Atriplex nummularium*) have been made in various districts of the Punjab since 1882, without very much success. In 1898-99 two other varieties of salt bush (*Atriplex lipto carpum* and *Atriplex halimoides*) were received from Australia. Experimental sowings were made in the districts of Dera Gházi Khan, Ferozepore, Karnál, Muzaffargarh, Jhang, Hissár, and Montgomery. The experiments failed completely except in Hissár, where about 90 plants came up, and reached a height of two feet. The experiment was repeated during the year under report. Seed was sent to the districts of Jhang, Gujránwála, Montgomery, Hissár, Dera Gházi Khan, Mooltan, and the Lahore Agri-Horticultural Gardens. Most of the seed sown in Hissár came up very well and progressed satisfactorily until the rains of 1900, when only 13 plants out of about 200 survived. In Montgomery sowings were made on the roadside of the station garden. The young plants are now in good condition having grown from 9 to 12 inches in height. The experiment failed in Gujránwála, only two plants having survived the rains.

The first sowings made in Mooltan in the month of February failed, later sowings proved more successful, the seed has germinated, and the plants will be transplanted in due course. The experience gained in the Lahore Gardens is very similar, the plants when young are very liable to be killed during the rains. There are two old bushes in the gardens which produced seed last year.

CHAPTER VI.

AGRICULTURAL EDUCATION.

Agricultural education in schools.

35. An Educational Conference met in April last to discuss the subject of agricultural education, and the orders of the Punjab Government on the recommendations of that body were issued in the Resolution, Home (Education) Department, No. 76 S. of the 3rd August 1900. The principal object in view was to arrange for more time in the Upper Primary classes for object and elementary science teaching and for practical mensuration and agriculture. It was decided that it is unnecessary to start school gardens in connection with village Primary Schools, even if the measure were practicable, on the understanding that the farming operations carried on around the schools might frequently be made use of as object lessons on the chief phases of practical agriculture.

The teaching of elementary principles by means of object lessons, illustrations and practical instruction has thus been given a very prominent place in the educational system in Primary Schools. The objects and illustrations procured in different schools will no doubt require careful selection and supervision. Very good illustrations or clay models of familiar objects can now be procured from Amritsar or Lahore. I have generally made a point of inspecting the village schools during my tours and have not unfrequently found boys who were able to tell me the names of different parts of a flower or the crops which grow at different seasons. Sometimes in an out-of-the-way village one comes across grotesque illustrations designed by some local artist; but as far as my opportunities have enabled me to form an opinion, I think that, generally speaking, the objects and illustrations selected are suitable for teaching purposes.

The subject of the system of village land records was introduced during the year as a subject of instruction in the Fifth Primary Class of all Vernacular Board Schools. It is too soon yet to judge whether it is appreciated. Copies of a map of some village near the school are required for the purpose of illustrating the Reader. The teachers themselves are rather hazy in their views on the subject; and it would not be time wasted if the local Revenue officials, the Tahsildar or Naib Tahsildar or District Kánúngo were to give them an explanation whenever they have an opportunity to visit the schools.

The teachers who come to the Normal School at Lahore for the purpose of being trained in their duties, have been given the opportunity of visiting the Agri-Horticultural Gardens for the purpose of study. They have an opportunity of seeing any agricultural or horticultural operations in progress and receive oral instruction from the teacher under whose charge they attend. I am informed that the classes have come to the gardens fairly regularly.

The Botanical Section of the Agri-Horticultural Gardens is maintained for instruction in botany of the medical students at Lahore. A course of Botany is to be introduced for the students at the Veterinary College, and the Veterinary students will also, I hope, be able to make use of this section of the gardens.

CHAPTER VII.

PUBLICATION OF AGRICULTURAL INFORMATION.

Agricultural information.

36. The statement below shows the statistics and reports which are sent from this office to the Government of India and Officers serving under the Imperial Government—

Name of Report.	To whom sent.
Weekly Telegraphic Weather, Health and Crop Report	Government of India (Revenue and Agricultural Department.
Fortnightly Prices Current Return (Retail Sale)	Government of India (Finance and Commerce Department).
Half-yearly Statement of Wages	Ditto.
Half-yearly Report about Mines	Director of Geological Survery of India.
Annual Statements of Mines (23, 24 and 25)	Ditto.
Statement of Minerals and Gems	Government of India through Punjab Government.
Statement of Tea Cultivation	Ditto.
Tables of Agricultural Statistics	Director-General of Statistics through Punjab Government.
First Forecast of Wheat Crops	Director-General of Statistics.
Second ditto ditto	
Final ditto ditto	
First Forecast of Rapeseed Crop	
Second ditto ditto	
Final ditto ditto	
First Forecast of Cotton Crop	
Second ditto ditto	
Final ditto ditto	
First Forecast of Indigo Crop	
Second ditto ditto	
Final ditto ditto	
First Forecast of Sesamum Crop	
Second ditto ditto	
Final ditto ditto	
First Forecast of Sugarcane Crop	
Second ditto ditto	
Final ditto ditto	
Fortnightly Prices Current Return (wholesale)	Director-General, through Punjab Government.
Statement of Cotton Mills	
Ditto Woollen Mills	

The number of papers received from and communicated to other Provincial Departments is given below:—

Subject.	Received.						Sent.			
	Reports.	Books.	Pamphlets.	Journals.	Other papers.	Total.	Reports.	Pamphlets.	Other papers.	Total.
Agriculture	39	1	12	6	...	58	2	...	...	2
Statistics { Crop	3	...	...	...	...	3	18	...	...	18
Statistics { Trade	55	...	2	...	...	57	...	...	...	...
Famine	2	...	...	...	...	2	...	...	...	...
Forest	10	...	3	...	...	13	...	...	...	...
Survey	3	...	...	...	8	11	...	...	...	...
Arts and Industries	1	...	2	...	...	3	...	...	...	...
Botany	1	...	...	...	...	1	...	...	...	...
Entomology	2	...	1	...	...	3	...	...	...	...
Geology and Minerals	11	...	2	...	...	13	...	...	...	...
Meteorology	7	...	1	...	...	8	...	...	...	...
Live-stock (Veterinary Science)	4	...	...	...	...	4	2	...	...	2
Total ...	138	1	23	6	8	176	22	...	...	22

Mr. C. A. Baron, Settlement Officer, Kohát, is engaged in preparing a Monograph on "Fodder Crops" in the Punjab, which, it is hoped, will be ready in the present year.

No paper has been communicated to *Agricultural Ledger* from this office during the year.

A pamphlet showing the local vernacular names of different cattle diseases, in each district, is in the Press.

CHAPTER VIII.

FINAL.

Final.

37. The work of Ledgering information has not made much progress during the year. The office library and records had fallen into much disorder and are being re-arranged. The library has been nearly completed and the record office will be taken in hand shortly. In order to carry out the work of Ledgering I shall require some additional establishment.

Proposals in regard to the revision of the establishment of this office are under consideration.

Notice of Officers.

38. Mr. P. D. Shroff, who was the Superintendent of this office for many years, retired on medical certificate at the end of the year. Munshi Ghulám Muhammad was appointed to succeed him. Lála Ganga Sahái was my Personal Assistant till the 12th February, when he was transferred to Kohát as Extra Assistant Settlement Officer. Lála Nathu Mal held charge of the appointment temporarily till the 6th May, when he was succeeded by Lála Gauri Shankar. All these officers have given me satisfaction, and assisted in inspections, examinations and office work.

R. SYKES, C.S.,

Offg. Director of Land Records and Agriculture, Punjab.

PUNJAB LAND RECORDS AND AGRICULTURE REPORT FOR 1901.

Agents for the sale of Punjab Government Publications.

IN ENGLAND.

E. A. ARNOLD, 37, Bedford Street, Strand, London, W. C.

CONSTABLE & Co., 2, Whitehall Gardens, London, S. W.

SAMPSON LOW, MARSTON & Co., St. Dunstan's House, Fetter Lane, London, E. C.

P. S. KING & SON, 9, Bridge Street, Westminster, London, S. W.

LUZAC & Co., 46, Great Russell Street, London, W. C.

KEGAN PAUL, TRENCH, TRÜBNER & Co., Charing Cross Road, London, W. C.

B. QUARITCH, 15, Piccadilly, London, W.

WILLIAMS & NORGATE, Oxford.

DEIGHTON BELL & Co., Cambridge.

ON THE CONTINENT.

FRIEDLANDER & SOHN, 11, Carlstrasse, Berlin.

OTTO HARRASSOWITZ, Leipzig.

KARL W. HIERSEMANN, Leipzig.

ERNEST LEROUX, 28, Rue Bonaparte, Paris.

MARTINUS NIJHOFF, The Hague.

IN INDIA.

THACKER, SPINK & Co., Calcutta and Simla.

NEWMAN & Co., Calcutta.

THACKER & Co., Bombay.

E. SEYMOUR HALE, 53, Esplanade Road, Fort, Bombay.

HIGGINBOTHAM & Co., Madras.

SUPERINTENDENT, AMERICAN BAPTIST MISSION PRESS, Rangoon.

GULAB SINGH & SONS, Mufid-i-'Am Press, Lahore.

REPORT

ON THE

OPERATIONS OF THE DEPARTMENT

OF

LAND RECORDS AND AGRICULTURE,

PUNJAB,

For the year ending 30*th September* 1901.

Published by Authority.

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY.

Lahore:
THE "CIVIL AND MILITARY GAZETTE" PRESS,
Sole Contractors for Printing to the Punjab Government.
1902.

No. 50.

FROM

A. H. DIACK, ESQUIRE,

Revenue and Financial Secretary to Government,
Punjab and its Dependencies,

To

THE SENIOR SECRETARY TO THE FINANCIAL
COMMISSIONER, PUNJAB.

Dated Lahore, 1st April 1902.

File No.

Revenue and Agriculture.

Agriculture.

SIR,

I AM directed to acknowledge the receipt with your letter No. 163 of the 25th February 1902 of the Annual Report on the operations of the Department of Land Records and Agriculture for the year ending 30th September 1901, which is fully reviewed in your letter under reply, and to say that the year's work appears to be creditable to Mr. Sykes.

I have, &c.,

A. H. DIACK,

Revenue and Finl. Secy. to Govt., Punjab.

Punjab Government Press, Lahore—3-4-02—375.

No. 163.

FINANCIAL COMMISSIONER'S OFFICE:

Dated LAHORE, *the 25th February* 1902.

FROM

R. HUMPHREYS, ESQUIRE,

Senior Secretary to Financial Commissioner, Punjab,

To

A. H. DIACK, ESQUIRE,

Revenue and Financial Secretary to Government, Punjab.

SIR,

I am directed to forward a copy of a letter No. 287, dated 27th January 1902, from the Director of Land Record and Agriculture, submitting the Annual Report on the operations of his department during the year ending September 30th, 1901.

The question of delay in the submission of the report has not arisen this year, and moreover owing to the orders of the Government of India it is probable that considerable changes will be made in the form and substance of the report before that for next year becomes due; the Financial Commissioner accordingly considers that the question of altering the date for the submission of the report referred to in this office letter No. 177, dated 26th February 1901, forwarding that for last year, may be dropped for the present.

2. The Financial Commissioner notes with satisfaction that all the candidates for the post of patwári examined during the year had passed at least the Middle School Examination. It would have been interesting to know, however, how many of these were agriculturists.

3. The result of the examination of kánúngo candidates was on the whole satisfactory, and the educational qualifications of those candidates who were not patwáris were all that could be desired, but the Financial Commissioner notes that less than half the total number of persons who presented themselves for examination were patwáris, which is to be regretted, as according to rule* two vacancies out of every three should go to accepted candidates who are patwáris.

* 104 (*v*) under the Land Revenue and Tenancy Acts.

4. Mr. Tupper is glad to see that the abstract village note-books are receiving more attention from the Collectors of districts, and he has every reason to believe that the list of districts given by the Director in which notes have been recorded is not exhaustive.

The importance of these books can hardly be over-estimated, and the Financial Commissioner hopes that in those districts in which it has been decided to have the Settlement Officer's remarks copied into them funds will shortly be provided for the purpose. The experiment made by Captain Douglas of keeping all these books at head-quarters is interesting, but the Financial Commissioner is doubtful as to whether it is to be recommended for general use, and intends to discuss the subject further with the Director.

5. The want of success attending the experiments for destroying locusts by means of fungus is disappointing. A fresh consignment of fungus from South Africa was received a short time ago, and it is hoped that its use will be attended with more favourable results. It seems probable that one reason for the failure hitherto experienced is the complicated way in which the fungus has to be treated before it can be used.

6. The figures given by the Director with reference to horse-breeding operations in the Punjab are very interesting in view of the proposals at present under consideration for introducing horse-breeding on a large scale into the Jhelum Canal Colony.

7. The result of the inoculation operations against rinderpest is in the Financial Commissioner's opinion very satisfactory and especially as regards the attitude of the people. It is to be hoped that with the improvements made in the Civil Veterinary Department during the year operations will greatly expand and that next year still better results will be reported.

8. The experiment for making *gur* from the juice of *chari* stalks is interesting, and in view of the failure of the experiments for extracting sugar from beet it may have a certain importance especially as *chari* can be grown on unirrigated land, whereas the cultivation of cane is limited to irrigated lands and is both troublesome and costly.

9. The progress of the experimental farm at Lyallpur is watched with interest by the Financial Commissioner.

10. The excess of expenditure over income in the case of the Delhi gardens is considerably greater this year than it was last. The Financial Commissioner considers that the question should be examined in some detail and steps taken to reduce the debit balance if possible.

11. Mr. Sykes was Director throughout the year, and, as before, discharged his duties to the entire satisfaction of the Financial Commissioner.

I have, &c.,

R. HUMPHREYS,

Senior Secretary to Financial Commissioner, Punjab.

No. 287.

FROM

C. L. DUNDAS, ESQUIRE, C.S.,

Offg. Director of Land Records and Agriculture, Punjab,

To

R. HUMPHREYS, ESQUIRE, C.S.,

Senior Secretary to the Financial Commissioner, Punjab.

Dated LAHORE, *the 27th January*, 1902.

SIR,

I HAVE the honor to submit the Annual Progress Report of this Department for the year ending 30th September 1901.

I have the honour to be,

Sir,

Your most obedient servant,

C. L. DUNDAS, C.S.,

Offg. Director of Land Records and Agriculture, Punjab.

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LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC

ANNUAL REPORT

OF THE

DEPARTMENT

OF

LAND RECORDS AND AGRICULTURE, PUNJAB.

For the year ending 30th September 1901.

CHAPTER I.

PREFATORY.

Personnel.

1. Mr. R. Sykes, C.S., held charge of the department throughout the year. I was appointed to officiate when that officer went on a month's leave on the 16th November 1901. On the expiry of his leave Mr. Sykes was placed on special duty, on which he is still employed. He has revised the present report.

Tours.

2. During the year he visited the head-quarters of 14 districts and 33 tahsils, inspecting the revenue records of 28 offices and conducting Kánúngo Examination at six places. The result of the inspection of the revenue records was in most cases satisfactory.

Miscellaneous work.

3. In the report last year Mr. Sykes gave some detail, which it is unnecessary to repeat, of the miscellaneous work that this department is required to do. The result of the comparison of departmental receipts with the treasury accounts has been reported separately.

Supply of forms required by patwáris and kánúngos and the adjustment of their cost.

Besides the forms printed for the Settlement Department 252 indents for forms required for patwáris and kánúngos were passed into the Press; 124 bills, aggregating Rs. 29,312-4-8 were checked and payments sanctioned. The amount disallowed on scrutiny being made in this office amounted to Rs. 104.

In addition to the above, forms worth Rs. 7,840 were printed for storage in this office and distributed to districts as required. This sum as also Rs. 8,281 paid for mapping sheets procured from England was met by advances drawn upon the Provincial Revenues which are adjusted annually by recoveries from the Patwár Fund. The total amount of such advances to be accounted for, at the end of May 1901, amounted to Rs. 18,782-3-4, of which a sum of Rs. 14,024-12-4 has since been recovered.

CHAPTER II.

LAND RECORD ESTABLISHMENTS.

Patwáris.

4. The number of qualified candidates for the post of patwári is amply sufficient throughout the Province. In only 7 districts, *viz.*, Karnál, Umballa, Kángra, Hoshiárpur, Siálkot, Gujrát and Hazára, was it found necessary to open schools for training new candidates in their duties. The school at Umballa is still open. In the other places mentioned the final examination has concluded with the result that 371 candidates out of a total number of 526 succeeded in passing the examination. All these candidates were men who had passed either the Middle School or

Entrance Examination of the Punjab University. The service is now well equipped with qualified men, who, as a rule, discharged their duties satisfactorily. The brunt of the census work fell on patwáris, who got through this additional work creditably.

Kánúngos.

5. Examinations of candidates for the post of kánúngo were held at 10 selected centres, *viz.*, Delhi, Karnál, Simla, Kángra, Jullundur, Mooltan, Lahore, Ráwalpindi, Hazára and Dera Ismail Khan; at different times of the year 254 candidates from British districts and 33 from the Native States of Bhartpur and Alwar presented themselves for examination, with the result that 171, or nearly 60 per cent., were successful, and 138 who had received practical training in the duties of patwáris for not less than two years were granted certificates of efficiency. Of the 287 candidates 124 were old patwáris and the remainder Entrance-passed men or persons of higher educational qualifications, 3 of them being B. As.

CHAPTER III.

UTILISATION OF LAND RECORDS.

Record of rights.

6. No change has been made in the form of the *khasra girdáwari* or of the village *jamabandi*, which are the basis of our agricultural statistics. Orders have, however, been issued with the sanction of the Financial Commissioner that collateral mortgages should in future be entered in the remarks column of a *jamabandi*, only as the result of a mutation proceeding after attestation by a Revenue Officer. Such mortgages, however, will not be included in the statistics of transfers prepared for the village note-books or for the annual reports.

A further step has been taken towards the reduction of work caused by the preparation of annual *jamabandis*. Quadrennial *jamabandis* have already been made the rule except in villages subject to fluctuating assessments or to di-alluvion rules, in which cases they were prepared yearly. The change now sanctioned by Government makes the preparation of an annual *jamabandi* in such villages discretionary instead of compulsory, and the Financial Commissioner has issued general directions as to the manner in which the discretion is to be exercised.

An additional column has been provided in the *jamabandi* and mutation register in the new villages of the Chenáb Colony for showing the name and description of *málguzár* who is neither the actual cultivator nor the owner of the land. The grantees of crown land generally sublet their tenancies to other persons, but as they are responsible for the payment of Government dues and enjoy a share of the profits it is necessary to retain their names in the records.

Statistical note-books.

7. The bilingual note-books introduced in 1897 have been written up in all districts; but in Kángra it is reported that the note-books for circles are unnecessary as there are really no assessment circles in that district. The question is still under consideration.

In the districts of Jhang and Gujránwála, which include the new villages of the Chenáb Colony, separate general district note-books for new and old villages have been opened with the approval of the Financial Commissioner, and a general note-book for the whole colony will also be kept at Lyallpur, the head-quarters of the Colony.

Abstract village note-books.

8. Sanction has been obtained to the employment of small temporary establishments for copying the Settlement Officer's remarks in the abstract village note-books of the districts in which the books have to be kept in their present form for a sufficiently long period, but the work of copying the remarks has not been taken in hand for want of the necessary funds which, it is hoped, will be shortly provided. Both on this account and on account of press of other work District Officers in some places have not recorded any notes in these books. At present the books are kept in the Tahsil and when the Collector or his Revenue Assistant goes out in camp they are lost sight of. Captain M. W. Douglas, Deputy Commissioner of

Delhi, keeps these books at the head-quarters and takes them out in camp. He has recorded some interesting observations in them. This method might be adopted everywhere. Some notes by Deputy Commissioners or their Revenue Extra Assistant Commissioners have also been recorded in the books of the districts of Rohtak, Gurgáon, Karnál, Umballa, Kángra, Jullundur, Jhang, Gujránwála, Hazára and Dera Gházi Khan.

Information regarding agricultural defects; occasional failures.

9. It is reported that deterioration of land by sand drifting and the action of hill streams continues in some parts of the Umballa District, but the injury is apparently of very small dimensions. In Pind Dádan Khan Tahsíl of the Jhelum District *kallar* is said to be spreading. It is possible that the evil may be checked by the extension of irrigation from the Jalálpur Canal, the project of which is understood to be under consideration.

Gradual failures.

10. The general enquiry into cases in which extensive failure of *sailáb* area in consequence of the opening of perennial canals has occurred, has been completed, but the reports received from District Officers are still under consideration. A separate report on the subject will be submitted to the Financial Commissioner shortly. It may, however, be noted that the statistics of the *sailáb* cultivation for the five years ending with 1898-99 do not indicate any falling-off in *sailáb* except in the lower reaches of the Sutlej.

CHAPTER IV.

SCIENTIFIC AND NATIONAL ENQUIRY UNDER IMPERIAL DIRECTION.

Geography.

11. The following work was done in the Punjab during the year under report by the Himalayan Party No. 18 of the Survey of India.

	Sqr. miles.
Detail survey on 1-inch scale in Kulu	487·50
Detail survey on 2-inch scale in Hoshiárpur and Kángra Districts ...	950·75
Detail survey on 4-inch scale in Kulu	59·17
Forest surveys on 4-inch scale	49·83
Forest surveys on 8-inch scale	0·25
Total	1,547·50

The total forest area surveyed on all scales and included in the above amounts to 440·64 square miles. The cost rate per square mile for each description of work is as follows:—

	Rs.
For supplementary and revisional triangulation	45·05
For 4-inch survey	78·30
For 2-inch surveys	60·08
For 1-inch surveys	25·25

Meteorology.

12. There were 212 rain-gauge stations in the Punjab at the close of the last year. Two new rain-gauge stations were established during the year, one at Toba Tek Singh and the other at Samundri in the Jhang District. Commissioners inspected 7, Deputy Commissioners and Settlement Officers 34, Assistant and Extra Assistant Commissioners 13 and Director of Land Records and Agriculture 21 rain-gauge stations during the year. The reports of the inspecting officers show that the rain-gauges are properly kept and that the rainfall is correctly measured.

Economic products.

13. The Reporter on Economic Products to the Government of India was supplied with articles entered in his programme for 1898-99 and 1900-01, and in various indents.

Further particulars about *dhakki* or *chota kikar* gum noticed in the last year's report, were supplied to Messrs. Rowntree and Co., who were also supplied with 56 sérs of gum, required for confectionery purposes.

Geology.

14. 198·5 oz. and 134·4 oz of gold was produced in the Jhelum and Hazára Districts during the year. Umballa, Hoshiárpur, Ráwalpindi, Pesháwar and Bannu also produced gold but in very small quantities. The amount of iron ore produced in the Simla District was small, being 4 tons only. The petroleum wells in the Ráwalpindi and Bannu Districts produced 1,874 gallons of oil.

No object of archæological interest was discovered by the Public Works Department during the year under report.

Entomology.

15. The caterpillar, which had done damage to the cotton crop in the Mooltan District and noticed in the last year's report, appeared in the Fázilka Tahsil of the Ferozepore District and injured cotton, maize and *jowár* crops. The Settlement Officer, Sirsa-Fázilka, was asked to advise the zamíndárs to make a careful ploughing of the land on which the affected crops had grown in order to break up the pupas and prevent the pest from recurring next year.

The Deputy Commissioner of Shahpur sent specimens of an insect called *toka* which had done damage to the cotton crop in that district. These were sent for identification to the Entomologist, Indian Museum, Calcutta, who reported that the insects were grasshoppers belonging to the family Acrididae and the species Chrotogonus Sanssuric Bolio and who said that although a number of reports had been received by him, relating to the damage done to crops by this insect, he was unable, owing to its life history being unknown, to recommend any special remedy. He, however, suggested the destroying of these insects by means of poisoned leaves laid out as baits amongst the crops, as this plan has proved successful in other parts of the world.

Tubes of locust fungus.

16. Tubes of fungus supplied by the Imperial Bacteriologist for destroying locusts were sent with English and vernacular copies of instructions to Deputy Commissioners of districts where locusts had appeared, but the reports received are to the effect that the fungus has not proved effective in destroying locusts.

Field pests.

17. In various parts of the Punjab, especially in the districts of Ferozepore, Lahore and in the Chenáb Colony, rats caused extensive injury to growing crops. The dry autumn was favourable to the spread of these pests, but little could be done to reduce their numbers.

Veterinary science.

18. The work of the Civil Veterinary Department has been noticed in a separate report. The more salient points are recapitulated here.

(*a*). *Distribution of Imperial Stallions.*—Of the 165 Imperial stallions 137 were employed on stud-work and the number of mares covered was 7,178 against 7,269 in the previous year.

Donkeys.—Of the 288 donkey stallions on the register 228 were employed on stud-work for mule-breeding and 19 for donkey-breeding. The former covered 14,301 pony mares and the latter 1,260 donkey mares. The Inspector-General, Civil Veterinary Department, has not been able to supply the 50 donkey stallions sanctioned by the Government of India for the improvement of the breed of donkeys in the Punjab.

(*b*). *Selection and branding of mares.*—There are 13,017 branded and 27 certificated mares on the Imperial list against 13,191 branded and 101 certificated mares in the past year.

The system of granting certificates by district officers to the owners of unbranded mares entitling them to be served by Government stallions, free of charge, having been abolished, certificates are now granted by Superintendents, Civil Veterinary Department, on their tour of inspection.

(*c*). *Elimination of unfit animals from the list.*—Two thousand three hundred and thirty-nine branded mares were struck off the register; of these 935 died, 1,059 were sold, 55 were stolen and 290 were declared unfit.

(*d*). *Inspection of stallions.*—The Superintendent of the North Punjab made a long district tour in the districts of Jhelum, Ráwalpindi and Hazára, in order to become more intimately acquainted with the people and the condition of their stock. He supervised the work of the Zilladárs and Veterinary Assistants in these districts. He also visited most of the other districts of his circle and attended the fairs at Eminabad, Jhang, Bannu, Shahpur, Lahore and Ráwalpindi.

The Superintendent of the South Punjab acted for the Superintendent, North Punjab, in addition to his own duties for three months. He visited all the districts and dispensaries in his circle, and was present at Amritsar, Hánsi and Kapúrthala Horse Shows. He inspected the Simla, Dalhousie, Dharmsála, Srínagar and Abbottabad Dâk lines, and acted as a member of the Annual Examination Board of the Punjab Veterinary College. He also purchased mules for the Army Remount Department and the Hissár Cattle Farm, and inspected the horse-boxes and trucks on the railways.

(*e*). *Supply of District Stallions. Horse and Pony Stallions.*—Of the 3 horse and 98 pony stallions belonging to District Boards, 3 horse and 93 pony stallions were employed on stud-work, and covered 5,258 mares. The three private stallions covered 186 mares. The average of mares covered per Government stallion employed on stud-work being 58·42 against 60·36 last year and of private stallions 40 against 36·66.

Donkeys.—Six donkey stallions, the same number as last year, were employed by District Boards in mule-breeding, and covered 175 pony mares.

Elimination of inferior sires.—The Imperial and District Board Veterinary Assistants performed 632 and 680 castrations, respectively, against 673 by Imperial and 673 by District Board Veterinary Assistants in the previous year.

Cattle-breeding.—The sum of Rs. 2,000 sanctioned by the Local Government for the purchase of Hissár bulls for different districts was made full use of. Sixteen bulls were purchased and supplied to districts whose finances were crippled by famine and plague operations.

Investigation and prevention of horse and cattle disease.—The number of cases of rinderpest reported during the year was 13,511 and deaths 8,121; the mortality was 60 per cent. of the cases attacked. The results of the inoculation done by the Assistant to the Inspector-General, Civil Veterinary Department, and the attitude of the people were encouraging. Of the 1,806 cases of Anthrax 1,658 proved fatal. No new veterinary dispensaries were established during the year. Eighteen Veterinary Assistants have received training in rinderpest inoculation. A third Superintendent of the Civil Veterinary Department was appointed shortly after the close of the year. He has been placed in charge of the Subordinate Veterinary Establishment, which has recently been reorganized as a Provincial service, and his special work will be to supervise measures for the investigation and repression of disease among agricultural stock.

Agricultural science.

19. Some further specimens of dried fodder were sent during the year to the Agricultural Chemist to the Government of India, at his request, for chemical analysis.

Statistics.

20. No change has been made in the form of statistical tables supplied to the Director-General of Statistics, Calcutta, but it has been pointed out by that authority that while in other provinces "net area cropped" is interpreted as the total of the area on which the crops were sown, in this province the total area of crops as distinct from the area in which they were grown in any one year is shown. Proposals have been submitted for making the Punjab statistics agree with other provinces in this respect.

Forestry.

21. This subject is dealt with by the Forest Department, which has issued its annual report for the past year. There is nothing to add to it from this department.

CHAPTER V.

SCIENTIFIC AND LOCAL ENQUIRY UNDER PROVINCIAL DIRECTIONS.

Experimental farm.

22. An experimental farm on two squares of land in the Chenáb Colony near the town of Lyallpur was started in May 1901, and placed in the charge of a Manager who has an excellent diploma from the Cawnpore Farm, is trained in revenue and land surveying, and has a good knowledge of English. Quarters for the Manager and the farm laborers and a store room have been built on the land and a cattle-shed is in course of construction. A small plot has been reserved for vegetables and the remaining land has been parcelled out in plots of a quarter of an acre each, each plot having a separate distinguishing number. The land has been fenced with a hedge of *phulái* (*Acacia modesta*). Some kharíf crops were sown of which the *jowár* proved most successful both as regards yield in grain and stalks. The Choya Saidan Shah (Jhelum District) maize was particularly good and attracted attention, but the local variety of maize was damaged by rats. The result of each experimental crop will be noticed in the next year's report, to which the operations properly relate. It may be noted, however, that an "interesting experiment of manufacturing *gur* from the juice of the *chari*" stalks grown on the farm was made. The production is apparently as sweet as that of the sugarcane, but the yield in the form of condensed *gur* which is 10 per cent. of the weight of stalks in the case of canes was 6 per cent. in the case of *chari* stalks. A plot one-quarter of acre of land has been manured with powdered gypsum and wheat sown on it. Many other varieties of wheat have also been sown for experimental purposes.

Improvement of Punjab wheats.

23. The sanction of Government has been received to the entertainment of two additional Assistant Managers to supervise experimental cultivation of local wheats in some selected gardens of District Boards. The men employed are at present undergoing practical training in the Government Farm at Cawnpore. Mr. Sykes has asked the Commissioners of Divisions to place at the disposal of this department a small piece of land from certain selected gardens. It is hoped that the experiments will be started next rabi.

Cross-bred Australian wheats.

24. Some varieties of cross-bred Australian wheat were received from New South Wales and distributed to several districts for experimental cultivation. They were generally sown on garden soil irrigated by wells, or on land served with canal water. Except in Gujránwála and Amritsar the stalks and leaves were rusted in all places, but the grain was not affected. The seed, however, was too small in quantity to enable a fair test of the experiment as regards yield. A small quantity of the produce of each variety has been sown for further experiments in the Government Farms at Lyallpur.

Paspalum dilatatum.

25. A very small quantity of seed of *Paspalam dilatatum* grass which is well known in Australia and is reputed to be a drought-resisting grass was received from the Superintendent, Royal Botanic Garden, Calcutta. Some of it was sent to the Superintendent, Cattle Farm at Hissar, for experimental cultivation, and the rest sown in my office compound at Lahore, where the soil is *kalreti*, *i.e.*, clayey impregnated with saline matter. The experiment at Hissár proved a total failure, but that made at Lahore was successful. The grass attained a height of four feet and gave a good supply of fodder; but it was grown under favourable conditions as regards irrigation. It does not appear to thrive on soil which is much impregnated with *kallar*, and it is not by any means certain that it will thrive without irrigation. In the Umballa dairy farm where it was tried as an unirrigated crop, it proved disappointing, and the failure in Hissár may also be due to the lack of sufficient moisture. A further supply of the seed has been ordered, and some seed from the crop grown in Lahore has been preserved, It is proposed to try it on a larger scale on the *sailáb* land in Mooltan in the date-palm plantation.

Sugar beet.

26. An attempt to manufacture sugar from sugar beet was made by the Superintendent, Agri-Horticulture Gardens. The result was not satisfactory, the percentage of impurity being too high to make the "jaggery" worth refining. The experiments made in the North-Western Provinces and Oudh have likewise failed; and according to the Director of Land Records and Agriculture of those Provinces "without expensive extracting machinery beet sugar cannot be made sufficiently pure to be of use to the refiner, and the central factory system is out of the question owing to the difficulty of storing the produce in the hot weather."

Date cultivation.

27. Since the close of the year 9 male and 70 female off-sets of Arabian date trees were received from the Agency Surgeon at Muscat and planted in a plot of Government land, near the river bank about 3 miles from the Mooltan City. The young plants are doing well at present, but their growth has yet to be watched. A protective dam to secure the land against being flooded by the river inundation is required. This will be made as soon as possible.

Other crops.

28. The sweet potatoes imported from America in 1899 and cultivated in the Agri-Horticultural Gardens at Lahore did not prove a success owing to the hardness of the soil. Its further cultivation at Lahore was therefore stopped and some tubers sent to Ferozepore for experimental cultivation. A part of the seed was sown in a piece of land near the District Board garden, and although the yield was not very great the quality of the tubers was improved by the change of locality. The Deputy Commissioner has been asked to continue the experiment.

Several other minor experiments were made in various districts with acclimatized seeds of grain of sorts grown in the Agri-Horticultural Gardens of Lahore; and it is satisfactory to observe that much interest is taken in the seeds so supplied. The Palestine wheat sent to Dera Gházi Khan Brucsabad Farm has deteriorated in quality. In the Lahore Gardens this wheat in some years has given a greater yield than the local varieties sown under similar circumstances; and by making a selection of the seed its quality is maintained.

Some varieties of hill rice have been sent for experimental cultivation to New South Wales, through the Reporter on Economic Products to the Government of India. A small consignment of the Kángra valley tea has also been sent to the Secretary for Agriculture in Australia for experimental cultivation in the eastern part of Victoria.

There is not much demand for *Inga Dulcis Mimosœa*. It is delicate and requires a sheltered situation. For field hedging the *phulái* (*Acacia modesta*) is preferred.

Fruit culture.

29. The Simla Municipality supplied 4,000 fruit trees in return for the sum of Rs. 1,500 received by that body from the Punjab Government for the Mahásu orchard near Simla. These were allotted to the Political Agent, Dir and Swát; Officer Commanding, Chakdara; Political Officer, Tochi Valley; Officer on special duty, Kurram; Officer Commanding, Darghái; and Deputy Commissioners, Hazára, Kohát, Pesháwar, Siálkot, Jhelum, Kángra, Umballa and Simla. The reports received show that the trees are in good condition and progressing very well.

The income from the Shálamár Garden amounted to Rs. 2,313 and expenditure to Rs. 2,110. The produce of the Shahdara Garden realized Rs. 944 and the expenditure on its up-keep amounted to Rs. 697.

Twenty new mango trees were planted in the Shálamár Garden and 100 oranges, 100 peaches, 40 apples and 25 pomegranates in the Shahdára Garden.

The expenditure on the Kudsia and Roshanára Gardens in the Delhi District exceeded the income by Rs. 3,392. Fifty-four mango trees were planted during the year in the former and 200 oranges in the latter garden. The area of the Roshanára Garden has been reduced by 28 acres in consequence of the acquisition of land by the Southern Punjab Railway.

Crop measurements.

30. The usual crop measurements to ascertain the yield of staple crops were carried out under the supervision of an Assistant Commissioner or Extra Assistant Commissioner in 14 districts. The area cut in each case is $\frac{1}{40}$th of an acre. The yields reported do not appear to indicate that exceptionally good plots of land are selected for the purpose of making the measurements; but the results must be used with caution as the area is small and no doubt often selected in the middle of a field.

Australian salt bush.

31. No reports have been received regarding the fate of the Australian salt bush plant, mentioned in paragraph 34 of last year's report. An enquiry has been made, and if there is any thing of interest to report, the information will be submitted separately.

CHAPTER VI.

AGRICULTURAL EDUCATION.

Agricultural education in schools.

32. There appears to be little to report this year on the subject of agricultural education. It is needless in this report to dwell on the fact that the whole subject of education is at present receiving the closest attention. As regards agricultural education it may be mentioned that the subject of the curriculum in zamíndári schools and village primary schools has been under consideration.

Agricultural information.

33. Mr. C. A. Barron, Settlement Officer of Kohát, has not yet been able to complete his Monograph on Fodder Crops. No paper has been communicated to the Agricultural Ledger from this department during the year.

CHAPTER VII.

FINAL.

Notice of Officers.

34. Lála Gauri Shankar held charge of the appointment of Personal Assistant till the 8th June, when he was transferred to Patiála as Assistant Settlement Officer. He was relieved by Lála Dina Náth, Officiating Extra Assistant Commissioner, who is still in office. Both officers worked very satisfactorily. The work of ledgering information has been unavoidably delayed until the revision of the record office is completed.

LAHORE,
18th January 1902.

C. L. DUNDAS, C.S.,
Offg. Director of Land Records and Agriculture, Punjab.

PUNJAB LAND RECORDS AND AGRICULTURE DEPARTMENT REPORT FOR 1902.

Agents for the sale of Punjab Government Publications.

IN LONDON.

E. A. Arnold, 37, Bedford Street, Strand, W. C.

Constable & Co., 2, Whitehall Gardens, S. W.

Sampson Low, Marston & Co., St. Dunstan's House, Fetter Lane, E. C.

P. S. King & Son, 9, Bridge Street, Westminster, S. W.

Luzac & Co., 46, Great Russel Street, W. C.

Kegan Paul, Trench, Trübner & Co., Charing Cross Road, W. C.

B. Quaritch, 15, Piccadilly, W.

ON THE CONTINENT.

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Karl W. Hiersemann, Leipzig.

Ernest Leroux, 28, Rue Bonaparte, Paris.

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IN INDIA.

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Newman & Co., Calcutta.

Thacker & Co., Bombay.

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V. Kalyanaram Iyer & Co., 189, Esplanade Row, Madras.

Superintendent, American Baptist Mission Press, Rangoon.

A. Chand & Co., Imperial Book Depôt Office, Delhi.

Gulab Singh & Sons, Mufid-i-'Am Press, Lahore.

S. Mumtaz Ali & Son, Rafah-i-'Am Press, Lahore [for Vernacular publications only].

REPORT

ON THE

OPERATIONS OF THE DEPARTMENT

OF

LAND RECORDS AND AGRICULTURE,

PUNJAB,

For the year ending 30th September **1902.**

Published by Authority.

Lahore:
THE "CIVIL AND MILITARY GAZETTE" PRESS,
Sole Contractors for Printing to the Punjab Government.

1902.

No. 21.

FROM

J. F. CONNOLLY, ESQUIRE,

Offg. Revenue and Financial Secretary to Government,

Punjab and its Dependencies,

TO

THE SENIOR SECRETARY TO THE FINANCIAL COMMISSIONER, PUNJAB.

Dated Lahore, 16th March 1903.

File No.

Revenue and Agriculture.

Agriculture.

SIR,

I AM directed to acknowledge the receipt of your letter No. 12, dated the 14th January 1903, submitting the Annual Report on the operations of the Department of Land Records and Agriculture, Punjab, for the year ending 30th September 1902, and in reply to state as follows.

2. The Lieutenant-Governor agrees with the Financial Commissioner that the report is a useful summary of good work performed during the year, and His Honour is obliged to Sir Lewis Tupper for his review of it. His Honour has noticed with much pleasure the high opinion the Financial Commissioner has formed of the manner in which Mr. Sykes discharged his duties as Director of Land Records and Agriculture, and I am to request that the thanks of Government may be conveyed to him for the good work done by him during his tenure of that office.

I have, &c.,

J. F. CONNOLLY,

Offg. Revenue and Finl. Secy. to Govt., Punjab.

Punjab Government Press, Lahore—26-3-03—450.

No. 12, dated Lahore, 14th January 1903.

From—R. HUMPHREYS, Esquire, Senior Secretary to the Financial Commissioner, Punjab,

To—The Revenue and Financial Secretary to Government, Punjab.

I AM directed to forward a copy of a letter No. 3026,* dated the 13th December 1902, from the Director of Land Records, Punjab, submitting his Annual Departmental Report for the year ending 30th September 1902, and to convey the following remarks.

* Not printed.

2. With reference to what Mr. Sykes says regarding Patwari candidates I am to observe that the attention of Deputy Commissioners in those districts where the number of candidates is unnecessarily large should be drawn to the matter with a view to checking further enlistment until the excess has been absorbed. It is certainly inadvisable to enlist candidates who may have to wait many years before getting appointments. The state of the Patwari and Kanungo registers of candidates as regards numbers and attainments is a question that merits more consideration than it gets. The figure of recruitment should be calculated in this service, as in others, on the actuarial basis of probable vacancies. The Financial Commissioner will ask the Director of Land Records to take up the subject from this point of view and work out specific proposals.

3. In connection with the scheme for consolidating the District Patwari Funds into one Provincial Fund, which is now before Government, the Financial Commissioner has been led to consider the question of the rules at present in force for granting retiring gratuities. Sir Lewis Tupper is of opinion that in view of the altered conditions which a Provincial Fund will bring about, there is a strong *primâ facie* case for making Patwaris' service pensionable. If the Financial Commissioner sees his way to proposing a practicable scheme for this purpose the matter will in due course be submitted for the consideration of Government.

4. The Financial Commissioner is glad to see some evidence that abstract village note books have been used and found useful by some District Officers. To a really good Revenue officer, who is zealous about doing his work thoroughly, these abstracts ought to be very useful, especially in connection with proposals for suspension or remission of revenue. Whether the maintenance of these books should be discontinued in Simla the Financial Commissioner is not prepared to say. The Director, if he thinks a change necessary, can refer the point separately for orders.

5. The subject of the Experimental Farm at Lyallpur and of the future position of the two Agricultural Assistants has been dealt with in detail in connection with the Annual Report on the working of the farm. The conclusions which are formulated in the present report regarding rust in wheat are fairly interesting so far as they go.

6. The wide circulation of pamphlets on agricultural matters may eventually do some little good if the subjects of the pamphlets are really well chosen and steps are taken to make the zamindars acquainted with their contents. The great point in favour of such a plan is that we have an excellent distributing agency at hand in the Patwaris and Kanungos. In course of time, when interesting results are obtained from our experimental and demonstration farms, people may be conveniently informed of them by means of the circulation of pamphlets.

7. The report which is now submitted is in the Financial Commissioner's opinion a useful summary of good work done during the year on which Mr. Sykes may be congratulated.

8. This is the last report of the kind which will be submitted by Mr. Sykes, who is about to vacate the appointment of Director. Sir Lewis Tupper wishes to say that in his opinion Mr. Sykes has held this appointment most successfully. He had not indeed had charge of a settlement, but this has proved no obstacle in his case to the thorough mastery in full detail of the land record system. In matters of principle also Mr. Sykes has shown grasp of his subjects and given sound advice, while in service questions, such as that of the provincialisation of the Patwari Fund, he has evinced capacity for administration. The Financial Commissioner will be very sorry to lose Mr. Sykes' services as Director, and hopes that Mr. Sykes will receive the thanks of Government for the good work he has done during his tenure of office.

Punjab Government Press, Lahore—16-4-03—300.

No. 3026.

FROM

R. SYKES, ESQUIRE, C.S.,

Director of Land Records and Agriculture, Punjab,

To

R. HUMPHREYS, ESQUIRE, C.S.,

Senior Secretary to the Financial Commissioner, Punjab.

Dated LAHORE, 13*th December* 1902.

SIR,

I have the honour to submit the Annual Progress Report of this Department for the year ending 30th Septe mber 1902.

I have the honour to be,

Sir,

Your most obedient servant,

R. SYKES,

Director of Land Records and Agriculture, Punjab.

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ANNUAL REPORT

OF THE

DEPARTMENT

OF

LAND RECORDS AND AGRICULTURE, PUNJAB.

For the year ending 30th September 1902.

CHAPTER I.

PREFATORY.

Personal.

1. Mr. Dundas officiated for me as Director of Land Records for about three months during which time I was on leave and then on special duty. I rejoined the appointment on the 1st March and have remained in charge until the close of the year. Lála Dína Náth, Officiating Extra Assistant Commissioner, was my Personal Assistant until the beginning of September. He then exchanged appointments with Chowdhri Sultán Ahmad who was the Revenue Assistant in Hoshiárpur. Lála Dína Náth worked to my entire satisfaction and proved himself industrious and prompt in the disposal of work.

Tours.

2. During the cold weather Mr. Dundas inspected 11 tahsils and 5 head-quarter offices, including all the tahsils in the Gurgáon District, and some of the tahsils of the Delhi, Gujránwála, Gujrát and Jhelum Districts. On rejoining the appointment I accompanied Mr. Burkell, the Assistant Reporter on Economic Products, on tour to the tea district of Kángra, and thence to Hoshiárpur and Jullundur. And in subsequent tours the districts of Mooltan, Rohtak, Karnál, Umballa, Amritsar and Ferozepore were visited.

Effect of separation of the Frontier Province on the work of the Department.

3. The separation of the Frontier Province has relieved me of inspection duties in the Frontier districts, but the duty of examining Kánúngos and Naib Tahsildars in the Frontier Province has been left with the Director of Land Records of the Punjab. The intention of this arrangement is to secure uniformity of standard in the tests of admission to the Subordinate Revenue Service in each Province. Examinations for Kánúngos in the Frontier Province were held at Abbottabad and Kohát. The Naib Tahsildar candidates of the Frontier were examined at Lahore at the same time as the candidates for the Punjab.

Alteration in the form of the report.

4. The form of this report has been altered to some extent in consequence of the orders of the Government of India regarding the curtailment of reports. The subjects of Geography, Geology, Forestry and Veterinary Science have been omitted and also the chapter showing the list of reports and returns received from and communicated to other Provincial Departments. On the other hand the subject of Land Record Establishment has been more fully dealt with in this report than usual, as it will no longer be included in the Land Revenue Report.

CHAPTER II.

LAND RECORD ESTABLISHMENTS.

Patwári candidates.

5. There is no lack of candidates for the post of patwári. The total sanctioned establishment of patwáris is 7,788 in the Punjab as newly constituted, while the number of accepted

candidates on the register during the year was 1,386. Recruiting is evidently much in excess of demand as the number of new appointments during the year was only 415. The lists of accepted candidates are very congested in nearly all districts, in some districts, for instance Ráwalpindi and Gurgáon, there is a candidate waiting for almost every appointment, and in most districts the proportion is one candidate for two or three appointments. Considering the number of candidates for these appointments it should be found possible to give a larger number of appointments to candidates of the agriculturist class. Out of 1,386 candidates accepted during the year only 535 belonged to the agricultural class, and the number of appointments given to agriculturists out of the 415 new appointments was only 117. The educational qualification of the candidates of the agricultural class is not quite so high as that of the other candidates, and in some districts, for instance in Hissár, it is difficult to obtain candidates of this class with the requisite qualifications, or it may be, as in parts of Hoshiárpur, that the leading land owning caste is Brahman, and that the best candidates are obtained from this class. But on the whole it seems evident that too many candidates are accepted in the first place, and, secondly, that too little discrimination is exercised to obtain candidates of the right class. Candidates for the appointment of patwári are trained and examined locally by the district officers. Patwári schools were opened during the year in the districts of Delhi, Rohtak, Gurgáon, Umballa, Ferozepore, Jullundur, Amritsar, Ráwalpindi and Dera Gházi Khan.

Patwáris.

6. The standard rates of pay of patwáris which have been agreed to by Government are Rs. 14, Rs. 12 and Rs. 10 per mensem, respectively, for the first, second and third grades. And the proportion in each grade which has been adopted as a standard is 25 per cent. of the total strength in the first grade, 50 per cent. in the second grade and 25 per cent. in the third grade. It is proposed to revise the patwári establishments of each district in accordance with these standards at the revision of settlement of the district. In exceptional cases these rates may be diverted from. During the course of the year, the patwári establishments of the Fázilka and Sirsa Tahsils and of the Muzaffargarh District have been revised on the approach of the close of settlement operations. The Sirsa Tahsil and Muzaffargarh District were held to be exceptional, as in the former the conditions of life are very severe, even drinking water being sometimes difficult to obtain, and in the latter the work which patwáris will have to do will be arduous and responsible, as they will have to assess a large amount of occupier's rate and fluctuating assessment. In both these cases therefore the pay of the highest grade of patwáris has been fixed at Rs. 15. The revision of the patwáris' establishment in the Muzaffargarh District was made on the understanding that if assessments on canal-irrigated lands are eventually undertaken by the Canal Department a reduction in the number of Revenue patwáris now sanctioned will be necessary. As regards the Chenáb Colony where the need for trained patwáris is an expanding one, the general sanction of Government has been obtained to increase the number of Revenue patwáris on the basis of one patwári for every 4,000 acres cultivated. A considerable increase in establishment has recently been sanctioned by the Financial Commissioner in accordance with the general sanction. A similar provision will, no doubt, be necessary in the case of the Jhelum Colony.

7. It has been ruled by Government that rewards should only be given to patwáris as a general rule during the actual currency of settlement operations and that they should be given at other times only in exceptional cases for special work certified by the Head of the Department to be outside the ordinary course of their duties. In accordance with these orders, sanction was given, during the year to an expenditure of Rs. 57 for the payment of rewards to some patwáris of the Moga Tahsil, who were employed in obtaining statistics for Mr. King in the course of his enquiry as to the water-rates on the Sirhind Canal. Rewards payable for work done during the course of a settlement are sanctioned by the Settlement Commissioner.

Forty-seven patwáris retired during the year, and a sum of Rs. 4,990 was sanctioned on account of retiring gratuities. The present system of granting

retiring gratuities to deserving patwáris has been worked liberally, and in my opinion it possesses some advantages over a system of retiring pension in the case of a service like this.

The district reports show how necessary it is to deal firmly not only with cases of dishonesty but of inefficiency and neglect of duties in dealing with patwáris who have to work independently, subject indeed to frequent inspections, but without continuous supervision. The present rules are elastic; penalties of fining, reduction to a lower grade, suspension and dismissal are frequently necessary; retirement with a gratuity before the age of 55 is possible in the case of men whose health is unequal to the work, and can be arranged for without the aid of a Board of Physicians; on the other hand, some men are retained in the service not always to its advantage beyond the limit of age which the Civil Service Regulations require in the case of pensionable appointments.

Patwár fund.

8. The income of the patwár fund during the year amounted to Rs. 12,62,410, and the total expenditure to Rs. 11,76,738. The balance at the close of the year was Rs. 7,32,089. The pending separation of the North-West Frontier Province prevented the scheme for the consolidation of the different district funds from being brought into operation last year. The figures showing the probable financial results of the scheme during the next 15 years have been revised with reference to the changed conditions of the province, and the orders of Government are now awaited.

Kánúngo candidates.

9. The names of 213 new candidates for the appointment of kánúngo were entered on the registers during the year. Ninety-seven of these were patwáris. The rest with seven exceptions were men who have passed the Entrance Examination. There were 46 vacancies during the year, 33 of which were given to patwáris. The claims of patwáris to promotion have therefore been sufficiently considered. There is an increasing tendency for young men who have received a fair education to enter service as patwáris in the hope of advancement to a higher position.

Examination of kánúngos.

10. Examinations of candidates for the appointment of kánúngos were conducted either by myself or my Personal Assistant at the following centres—Kohat, Lyallpur, Jhang, Umballa, Dharmsála, Hissár, Abottabad and Amritsar. The total number of candidates examined belonging to Punjab districts was 191, of whom 105 completed the examination, and 20 were partly successful. Besides these men 20 candidates for employment in Native States were also examined, of whom 10 succeeded in passing the test according to the standard required for the Punjab. Certificates of efficiency are given only when the candidates have passed the examination, and also received a practical training in revenue work either in a settlement or locally under the supervision of an experienced kánúngo and patwári. It has been found in the case of candidates for the appointment of kánúngo as well as for that of patwári that there are more candidates than are required, and many candidates do not seriously train themselves for the appointment. It has therefore been decided that in future candidates will be examined in their book knowledge after completing their practical training in the fields.

Improved prospects of kánúngos.

11. In consequence of the grant made by the Government of India for the purpose of benefiting establishments, the Punjab Government has agreed to proposals which have been submitted to raise the rates of pay of district kánúngos to the sliding scale of Rs. 60—4—80, and of office kánúngos to Rs. 40 per mensem. At the same time an increase has been sanctioned in the number of field allowances of field kánúngos.

Thirteen kánúngos were appointed or accepted as candidates for the post of Naib Tahsildar in various districts during the year; and three sadar kánúngos were appointed as Tahsildars.

CHAPTER III.

UTILISATION OF LAND RECORDS.

Annual records.

12. The total number of mutations attested during the year was 552,634. The district figures show a considerable decrease in the total number of transfers attested compared with the figures for last year, except in Hoshiárpur, Jullundur, Ludhiána and Siálkot, where the mortality from plague accounts for a great increase in transfers by inheritance. Elsewhere the decrease in the total number is attributed to the operation of the Alienation of Land Act. The number of pending cases shows also a corresponding decrease.

The substitution of a quadrennial *jamabandi* for the annual *jamabandi* in the villages affected by dialluvion action was made optional by the alteration of rule which was noticed in the report of last year. This option has been generally adopted.

Changes in village records.

13. No alterations of great importance have been made during the year in the form of the village land records. In the Mooltan District a change was made in the form of the *khasra girdáwari*, so as to show the names of the tenants in full and to make the books run for two years instead of four. The object of the change was to have more room for the entries and initials of the supervising staff and to keep a clear record of tenants who are liable for occupier's rates, which in this district are assessed in accordance with the crop inspection of the Revenue Officers.

A few slight changes were necessary in consequence of the passing of the Alienation of Land Act in order to discriminate between transfers to members of an agricultural tribe and persons who are not members of an agricultural tribe. The Government of India have agreed to dispense with the statement hitherto included in the annual agricultural statistics showing varieties of tenures. This decision will enable us to simplify the form of Statement VI of the Agricultural Note-Books. The simplification of the form of the statement showing the varieties of land revenue assignments is also under consideration.

In order to obtain more accurate figures as to the area placed under crop during the year, a change of rule was introduced in regard to the method of filling in column 9 of the yearly register of area (*milán raqba*).

The question came up for decision how land should be classified, which is cultivated by a class of cultivators who are not tenants in the ordinary sense of the word, but who cultivate land jointly with the owner and bring their own cattle and share in the labour, taking a share of the profits in some proportion to the amount of labour and capital which they contribute. It was decided by the Financial Commissioner that for the purpose of the statistics which distinguish between land which is cultivated by the owners and that which is cultivated by tenants, such land should be classed as cultivated by the owner.

The orders introduced two years ago in regard to the more complete record of transfers of rights in the *shámilát* land have presented no difficulty in districts which I have recently inspected. The Kángra District is an exception, and the orders had to be relaxed to some extent in that district.

Abstract village note-books in Kángra District dispensed with.

14. The tenures in the Kángra District are peculiar, and it has been found necessary to treat the district exceptionally also in regard to the preparation of abstract note-books. The Deputy Commissioner reported that it was very questionable whether there would be any commensurate return for the very heavy amount of labour involved in making out these abstract note-books for a district which presented so many peculiar features as the Kángra District does, and whether they could ever be used, the number of estates and the consequent number of volumes being so great. After the matter had been discussed by me with the local officer and with the Commissioner, it was decided by the Financial Commissioner that the abstract note-books might be dispensed with in this district.

15. Abstract note-books have been prepared for the Simla District but no remarks have been recorded in them since their introduction either by the Deputy Commissioner or his Assistant. The reason offered by the Deputy Commissioner is that in a district like Simla a good portion of his time has to be spent at head-quarters, and that in his capacity of Superintendent of Hill States, his chief camping has to be done in the several States under his political control. This appears also to be a case in which the abstract note-books are an unnecessary addition to the ordinary detailed village note-books.

Abstract village note-books in other districts.

The special forms of abstract village note-books sanctioned on the conclusion of the recent resettlement for the Mooltan, Jhelum and Muzaffargarh Districts have been brought into use. In the Muzaffargarh District these note-books have been completed for the Sináwán Tahsil, and are under preparation in the other tahsils of the district. The Settlement Officer has placed in these books his village inspection note, and the statements and maps which he used when inspecting the villages. The Deputy Commissioner of Jhelum reports that he found the special form which has been devised of the greatest assistance to him when making suspensions last rabi.

The notes recorded by the Settlement Officer regarding each village are being copied into the abstract note-books in the districts of Gurdáspur, Amritsar, Siálkot, Dera Gházi Khan, and Shahpur and also in Hissár. The work is nearly completed.

16. The Deputy Commissioners of Hoshiárpur (Mr. Fagan) and of Karnál (Captain Lowis) have perhaps made more use of these note-books than others for the purpose of recording the result of their village inspections. The Deputy Commissioner of Karnál reports that the remodelling of the canals has resulted in a reduction of the canal-irrigated area of tahsil Pánipat, and that he is enquiring from the Canal Department if a remedy can be devised. No other agricultural defect has been reported.

District officer's notes.

CHAPTER IV.

SCIENTIFIC ENQUIRY UNDER PROVINCIAL OR IMPERIAL DIRECTION.

17. The first annual report on the working of the Lyallpur experimental farm has just been issued. The primary object which has been kept in view in arranging for the different series of experiments is the study of different varieties of Punjab crops, especially of wheat, and their improvement by cross-fertilization and selection. The rabi series of experiments in connection with Punjab wheats has so far received the most attention. During the first year 27 samples of different Punjab wheats were sown, and 11 of these were eventually selected as being of different varieties. Besides these 11 varieties a fresh series of different samples numbering 72 in all has been obtained from zamíndárs in different districts of the Province. A preliminary examination and classification of these varieties were made by my Agricultural Assistants. Botanical samples were also forwarded to the Reporter on Economic Products for the Calcutta Museum. They will be sown and examined next harvest at Lyallpur, and a duplicate series has been sent to Hissár, to be grown and studied there on the experimental portion of the Hissár cattle Farm, which is under Imperial Direction. It will no doubt again be found that for practical purposes many of them must be regarded as identical. The two Agricultural Assistants mentioned in paragraph 23 of last year's report having been specially trained at Cawnpore in the work of cross-fertilization of wheats, and having completed the preliminary classification of wheats collected from the different districts,

Lyallpur agricultural farm.

have been posted to Hissár where their work can be supervised and controlled by the Inspector-General of Agriculture. The experimental work at Lyallpur and Hissár will, it is hoped, be followed eventually by an extensive distribution of selected seed grain. To grow the seed required a larger area of land than is at present attached to the farm will be needed.

I have recently submitted proposals in regard to the reservation of more land both for the experimental farm and for an educational institution which may be started in connection with it. I have also represented the need which exists for the appointment of a fully trained agricultural expert of wide experience and proved ability as Assistant Director of Agriculture.

Preliminary enquiry as to rust resistance in wheat.

18. In connection with the investigation in regard to the rust-resisting varieties of wheat, which is one of the principal objects of experimental investigation at Lyallpur, a preliminary enquiry was made whether the zamíndárs have noticed any difference in the resisting power of wheat to attacks by rust. The enquiry made elicited the following replies, showing the existing state of knowledge on the subject among the Punjab peasants:—

(1) There is no variety of wheat less liable to rust than others.

(2) Wheat grown from old seed does not escape more than wheat grown from fresh seed. This was also the result of a special experiment made at Lyallpur.

(3) A thickly sown, thickly growing crop is more liable to rust than a thin crop.

(4) Wheat grown on low-lying land and on sandy cold soil is more liable to rust than wheat grown in a more favoured locality.

(5) Rain and cloudy weather following artificial irrigation cause rust.

(6) On the other hand rain followed by sunshine causes it to disappear if not too far advanced. The same result follows a timely irrigation with well water. Cloudy weather in February especially induces rust.

Date cultivation.

19. The date plantation at Mooltan referred to in paragraph 27 of the report of last year is thriving. The trees are, of course, very young yet. It has been suggested to me that it is not so much necessary to improve the variety of dates or to introduce new varieties into the Mooltan and adjacent districts, as to educate the people into the proper method of cultivation and artificial fertilization of the existing varieties. For this purpose it would probably be necessary to obtain the services of an expert familiar with the method adopted in Persia, Basra or Algiers.

Paspalam dilatatum.

20. The plot of this grass which was grown in the compound of my office at Lahore, having shown a strong growth as an irrigated crop and become well established last year was left this year without irrigation. The test was a severe one as the winter was rainless and the summer monsoon of 1902 was late. The plot still survives and has held its own against other grasses, but it shows signs of stress from the drought of the early summer, and it does not show much tendency to spread.

Fruit trees.

21. Four thousand young fruit trees were as usual distributed from the Mahásu orchard. Enquiries were made from several Deputy Commissioners, some Frontier Officers and Officers in the Police, Education and Public Works Department to ascertain where the trees would be acceptable. As the result of these enquiries the trees were sent to Kángra, Kohát, Bannu, the Malakand, Simla, Hazára, Umballa, Lahore, Jhelum, Pind Dádan Khan and Kurram. The number of apple trees available for distribution from these gardens is much below the demand for this kind of fruit tree, while there are too many almonds and walnuts. The reports

of fruit culture in the neighbourhood of Simla are encouraging, but it is to be regretted that a considerable loss of young trees which had been distributed to different persons has been attributed to the laceration of the roots caused by careless handling on the part of the gardeners at Mahásu.

22. No new trees were planted in the Shálamár or Shahdera gardens. Mr. Hein, the Superintendent of the Agri-Horticultural Gardens, Lahore, inspected the mango groves in the former garden, the condition of which has not been satisfactory during the last few years. This year the income from this garden including the sale of trees amounted to Rs. 1,765 compared with only Rs. 506 last year. The Shahdera gardens have, on the contrary, realized only Rs. 468 on account of the sale of fruit compared with Rs. 882 last year. There is nothing of interest to note in regard to the Delhi gardens. Some acres of the Roshanára gardens were required for the South Punjab Railway.

Sweet potatoes.

23. American varieties of sweet potatoes, *viz.*, Nausemond, Red-nose and Hanover, have been cultivated at Ferozepore, Gujrát and Hoshiárpur with fairly promising results. The tubers are sweeter than the native varieties, but they have not yet found much favour with the people. The same varieties are now being grown on the Lyallpur Farm.

Australian salt bush.

24. Our efforts at introducing the salt bush in the Punjab have nowhere got beyond the stage of cultivation in nurseries or pot yards. A number of plants grown in the public gardens at Hissár promise more hopefully than any elsewhere. They have seeded and the Deputy Commissioner is experimenting with the seed. But they had been grown with the aid of canal irrigation, and it must be admitted that the salt bush which in Australia is a drought-resisting fodder bush is not required in places where there is canal irrigation. The difficulty, however, hitherto has been to acclimatize it under any conditions.

Crop measurements.

25. The usual crop measurements to ascertain the yield of staple crops were carried out under the supervision of an Assistant Commissioner or Extra Assistant Commissioner in 14 districts. The quinquennial report required by the Government of India regarding the rates of yield assumed for statistical purposes, was submitted during the year. The data available for the purpose of correcting previous estimates included these special crop measurements, and also the results of experiments made for assessment purposes made by Settlement Officers.

Economic inquiries.

26. Doctor Watt, the Reporter on Economical Products, and Mr. Burkill, his Assistant, visited the Lahore Museum during the month of March, and a partial revision of the economic products in the Museum was undertaken. The Museum Committee has asked me to undertake the collection of more samples of economic products of major importance obtainable in the Punjab such as fibres, oils, tannins and food products. As regards the collection of economic products of minor importance, this province has endeavoured to take its share in collecting for the Calcutta Museum, and may hope to receive, duly identified, samples from the Calcutta Museum, where duplicates exist, sufficient for the purpose. The fittings of the economic section of the Lahore Museum have still to be renovated and re-arranged ; and because the Museum has not been ready to receive further specimens, and also because I have had little time this year to give to this subject, I have done practically nothing so far in the matter of collecting for the local museum.

Meteorology.

27. There are 189 rain registering stations in the province. Of these Commissioners inspected 7, Deputy Commissioners and Settlement Officers 28, Assistant and Extra Assistant Commissioners 14 and the Director of Land Records and Agriculture 18. The reports received show that the rain-gauges and registers are properly kept, and that the rainfall is correctly measured.

Agricultural statistics.

28. Statement D., formerly included among the agricultural statistics which was designed to show varieties of tenures, has been discontinued by the orders of the Secretary of State, as it has been found that this subject does not easily lend itself to any uniform system of statistical treatment.

CHAPTER V.

AGRICULTURAL EDUCATION.

Distribution of pamphlets.

29. Ten thousand copies of the translation of Bulletin No. 14 issued by the United Provinces Department of Agriculture on the subject of different methods of conserving manure have been distributed partly through the agency of the village school with the assistance of the Director of Public Instruction and partly through District Board Agency. A short vernacular pamphlet on veterinary matters is also being prepared by Veterinary Lieutenant Walker, for the use of zamíndárs. With the permission of the Director of Public Instruction it is also proposed to supply copies of this pamphlet to village school masters for the school library and for reference in the teaching of object lessons. Deputy Commissioners have, generally speaking, expressed the opinion that the education imparted at village primary schools is suitable for the training of boys who are to become patwárís. As a matter of fact, most of the candidates for this appointment have now passed the Middle School Examination.

Object lessons.

30. The selection of suitable illustrations and objects for the purpose of object lessons has received careful attention from the District Inspector of Schools in the Amritsar District. The Deputy Commissioner, Mr. Maclagan, reports as follows :—"Object lessons are fairly well taught in this district. Pictures, clay models and tools of craftsmen have been prepared under the direction of the District Inspector of Schools. These are said to be appreciated throughout the Province. Models of object lesson notes have been written by the District Inspector of Schools and the pamphlet has been supplied to all the schools. The District Inspector of Schools has also written a list of the objects required for object lessons. Printed copies of these have also been sent to the schools." I have not had an opportunity of examining these clay models. The models in some schools in the Lahore and Ferozepore Districts are very unsuitable, being mere caricatures of what they should represent.

CHAPTER VI.

Office establishment and ledgering work.

31. My office establishment has been strengthened by the appointment of a ledgering clerk and of a second copying clerk. The salaries of the head statistical clerk and of the record clerk have also been increased.

The record department is now in a much more efficient condition than it was. Very fair progress has been made in the Ledgering Department, which should prove of great assistance in collecting and classifying information about all matters of agricultural interest. In connection with this branch of the office work, a very modest commencement towards a botanical collection has been made during the course of my recent tours.

LAHORE :
3rd December 1902.

R. SYKES,
Director of Land Records and Agriculture, Punjab.

QUINQUENNIAL RETURN.

TABLE SHOWING THE STATISTICS OF EXISTING PATWARI AND FIELD KANUNGO CIRCLES IN THE PUNJAB FOR THE AGRICULTURAL YEAR ENDING 15TH JUNE 1902.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
District.	Number of Field Kánúngo Circles.	Number of Patwáris.	Area and Revenue (00's omitted). Area in acres. Total.	Area in acres. Cultivated.	Total assessment.	Number of fields.	Number of khatauni holdings.	Average per Field Kanungo. Fields.	Average per Field Kanungo. Khatauni holdings.	Average per Patwari. Fields.	Average per Patwari. Khatauni holdings.	Rate of Patwári Cess per cent. on annual value.	Remarks.
					Rs.								
Hissár	15	301	33,206	26,179	7,793	429,852	274,692	28,657	18,313	1,428	912	2-5-6 to 3-2-0	Rs. 2-9-8 in four tahsils, Rs. 2-5-6 in Budhláda and Rs. 3-2-0 in Sirsa.
Rohtak	10	242	11,542	9,671	9,582	704,740	288,490	70,474	28,849	2,912	1,192	1-10-0 to 1-12-0	Re. 1-12-0 in Sámpla and Jhajjar, Re. 1-10-0 in Rohtak and Re. 1-8-0 in Gohána.
Gurgáon	14	310	12,415	10,014	12,094	1,091,521	336,146	77,966	24,010	3,521	1,084	2 0 0	
Delhi	11	225	813,380	542,790	8,50,152	1,133,738	268,797	103,067	24,436	5,039	1,195	2 2 0	
Karnál	15	333	20,151	11,548	10,727	1,152,864	335,202	76,858	22,347	3,462	1,007	2-2-0 to 2-11-9	Rs. 2-2-0 in Karnál and Pánipat, Rs. 2-11-9 in Indri, Rs. 2-11-4 in Thánesar, Rs. 2-5-6 and Rs. 2-11-4 in Pahowa.
Umballa	15	356	11,884	7,658	11,495	1,375,072	399,914	91,671	26,661	3,862	1,123	2 5 6	
Simla	1	8	490	100	175	48,551	9,608	48,551	9,608	6,069	1,201	* 3-2-0 to † 2-8-0	* Simla and Kotgarh, † Kotkhai.
Kángra	16	315	24,672	5,898	9,251	2,169,081	446,803	135,568	27,925	6,886	1,418	1-9-0 to 2-9-8	
Hoshiárpur	20	461	14,304	7,296	14,296	2,945,644	801,527	147,282	40,076	6,390	1,739	* 2-2-0 to † 2-1-4	* In Una. † In other tahsils.
Jullundur	14	402	8,703	6,975	14,877	2,040,805	557,178	145,772	39,798	5,077	1,386	1 13 7	
Ludhiána	14	300	8,910	7,655	11,103	1,479,592	354,815	105,685	25,344	4,932	1,183	1 9 0	
Ferozepore	15	340	26,108	21,700	11,181	1,317,970	444,508	87,865	29,634	3,876	1,307	* 2-5-6 to † 3-2-0	* In Ferozepore, Moga, Zíra and Muktasar. † In Fázilka.
Mooltan	19	326	38,026	10,034	11,102	1,150,162	153,180	60,535	8,062	3,528	469	3 2 0	
Muzaffargarh	12	212	20,198	5,096	6,144	911,157	267,587	75,930	22,299	4,298	1,262	3 0 0	
Jhang	25	352	43,731	17,392	12,703	2,426,408	219,775	97,056	8,791	6,893	624	2 10 6 3 11 0	District. Colony.
Miánwáli	11	176	49,951	7,485	4,815	718,648	199,903	65,332	18,173	4,083	1,136	2-8-0 to 5-0-0	Fixed Rs. 2-8-0 and fluctuating Rs. 3-2-0 in Leiah and Bhakkar; Rs. 5 Isa Khel and Miánwáli. Pacca Rs. 2 8-0, Kacha Rs. 3-2-0.
Dera Gházi Khan	11	180	34,671	9,869	5,369	564,487	217,546	51,317	19,777	3,136	1,209	3 2 0	
Lahore	15	321	23,082	13,505	10,282	1,793,835	436,414	119,589	29,094	5,588	1,360	2 8 0	
Amritsar	11	305	9,977	7,886	12,605	1,426,676	544,632	129,698	49,512	4,678	1,786	2 5 6	
Gurdáspur	17	426	11,675	8,510	15,383	1,578,049	615,865	92,826	36,227	3,704	1,446	2 5 6	
Montgomery	13	207	29,532	6,843	4,235	920,106	136,471	70,777	10,498	4,445	659	3 2 0	
Siálkot	17	403	12,652	9,491	14,918	1,874,633	662,638	110,273	38,979	4,652	1,644	2 9 8	
Gujránwála	16	296	19,078	11,338	10,380	1,168,088	322,210	73,005	20,138	3,946	1,088	2-9-8 to 3-12-0	
Ráwalpindi	15	327	32,401	15,251	9,751	1,494,230	597,511	99,615	39,834	4,570	1,828	3 2 0	
Jhelum	13	249	25,483	10,404	9,134	1,621,016	410,130	124,693	31,584	6,510	1,648	3 2 0	
Gujrát	10	232	12,319	8,435	8,423	1,114,517	418,012	111,452	41,801	4,804	1,802	2 5 6	
Shahpur	9	183	30,318	7,891	6,15,526	545,789	204,344	60,643	22,705	2,982	1,117	2 0 0	
Total	374	7,788	1,378,859	804,914	17,13,496	35,197,231	9,923,898	94,110	26,534	4,519	1,274	...	

STATEMENT SHOWING ANNUAL ABSTRACT OF INCOME AND EXPENDITURE OF THE PATWARI FUND OF THE PUNJAB FOR THE YEAR 1902.

Division.	District.	No. of Tahsil.	Name fo Tahsil.	Balance in hand at beginning of year.	Rate of Patwári Cess (give detail for each tahsil).	Demand.	Total Receipts.	Expenditure on salaries of Patwáris.	Contribution to Kánúngo Establishment.	Other Charges.	Total Expenditure.	Closing Balance.
				Rs.	Rs. a. p.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
DELHI ...	Hissar ...	1	Hissár R. S.	24,844	...	52,528	21,632	41,401	...	4,850	46,250	226
		2	Hánsi R. S.		...							
		3	Bhiwáni R. S.		5 3 4							
		4	Fatahabad		...							
		5	Sirsa R. S.		6 4 0							
		6	Budhláda		4 11 0							
	Rohtak ...	7	Rohtak	14,483	3 4 0	40,407	25,349	35,720	...	1,635	37,355	2,477
		8	Sámpla		3 8 0							
		9	Gohána		3 0 0							
		10	Jhajjar		3 8 0							
	Gurgaon ...	11	Gurgáon R. S.	10,361	4 0 0	48,131	38,335	46,248	6,000	1,434	53,682	4,986
		12	Rewári R. S.									
		13	Palwal									
		14	Núh									
		15	Firozpur									
	Delhi ...	16	Delhi R. S.	15,541	4 4 0	43,371	38,557	34,917	...	1,227	36,144	2,413
		17	Sonepat		4 0 0							
		18	Ballabgarh		4 8 0							
	Karnal ...	19	Karnál R. S.	54,873	4 4 0	59,559	64,379	49,531	...	2,252	51,783	59,910
		20	Pánipat R. S.		4 4 0							
		21	Kaithal R. S.		4 11 0							
		22	Gulah Sub-Tahsil		...							
		23	Thánesar and Pahowa Iláqa ...		5 6 8							
		24	Indri		5 7 6							
	Umballa ..	25	Umballa R. S.	20,237	4 11 0	58,846	52,969	50,044	...	2,143	52,187	21,018
		26	Kharar									
		27	Rúpar									
		28	Naráingarh									
		29	Jagádhri R. S.									
	Simla ...	30	Simla and Bharauli	143	6 4 0	992	992	943	...	18	960	175
		31	Kotkhái and Kotgarh		5 0 0							

JULLUNDUR	KANGRA ...	32	Kángra	46,277	...	48,101	42,000	42,469	...	4,886	47,355	40,923
		33	Pálampur		...							
		34	Núrpur		5 3 4							
		35	Dera		3 2 0							
		36	Hamírpur		to							
		37	Kulu		5 3 4							
		38	Plách		5 3 4							
	HOSHIARPUR ...	39	Hoshiárpur	29,634	4 2 8	60,003	59,892	56,963	...	1,533	58,496	31,030
		40	Dasúya		4 2 8 to 4 4 0							
		41	Garhshankar									
		42	Una		4 4 0							
	JULLUNDUR ...	43	Jullundur R. S.	19,349	3 11 2	57,447	57,379	53,152	...	2,840	55,991	20,737
		44	Nakodar									
		45	Phillour R. S.									
		46	Nawashahr									
	LUDHIANA ...	47	Ludhiána R. S.	22,758	3 2 0	38,120	60,878	36,587	...	1,323	37,910	22,968
		48	Samrála									
		49	Jagráon									
	FEROZEPORE ...	50	Ferozepore R. S.	6,998	4 11 0	63,194	58,319	51,896	...	819	52,715	12,603
		51	Moga									
		52	Zíra									
		53	Mukhtsar R. S.									
		54	Fázilka R. S.		6 4 0							
MOOLTAN ...	MOOLTAN ...	55	Mooltan R. S.	52,732	6 4 0	76,584	75,601	50,070	...	8,719	58,789	69,544
		56	Shujabad R. S.									
		57	Lodhrán R. S.									
		58	Mailsi									
		59	Kabírwála									
	MUZAFFARGARH	60	Muzaffargarh	22,955	*... †... 6 4 0	36,801	37,146	30,012	...	4,147	34,158	25,943
		61	Alipur									
		62	Siuáwán									
	JHANG ...	63	Jhang	15,979	5 0 0	22,805	22,559	20,702	...	3,203	23,905	14,633
		64	Chiniot									
		65	Shorkot									
		66	Samundri									
		67	Lyallpur R. S.									
		68	Toba Tek Singh R. S.									
	MIANWALI ...	69	Miánwáli	15,655	5 0 0	29,375	45,030	17,253	2,250	698	20,201	24,829
		70	Isa Khel									
		71	Leiah		Fl. 6 4 0 Fixed 5 0 0							
		72	Bhakkar R. S.									
	D. G. KHAN ...	73	Dera Gházi Khan	24,511	3 2 0	35,498	60,009	25,038	6,373	2,212	33,623	26,386
		74	Sanghar		3 2 0							
		75	Jámpur		and 2 8 0							
		76	Rájanpur		3 2 0							

*Rs. 3, Rs. 3-8-0, Rs. 4, Rs. 4-8-0, Rs. 5, Rs. 5-8-0 and Rs. 6.
†Rs. 3, Rs. 4-8-0, Rs. 5 and Rs. 6.

STATEMENT SHOWING ANNUAL ABSTRACT OF INCOME AND EXPENDITURE OF THE PATWARI FUND OF THE PUNJAB FOR THE YEAR 1902—*concluded.*

Division.	District.	No. of Tahsil.	Name of Tahsil.	Balance in hand at beginning of year.	Rate of Patwári Cess (give detail for each tahsil).	Demand.	Total Receipts.	Expenditure on salaries of Patwáris.	Contribution to Kánúngo Establishment.	Other Charges.	Total Expenditure.	Closing Balance.
				Rs.	Rs. a. p.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
LAHORE ...	LAHORE ...	77	Lahore R. S.	20,945	5 0 0	51,767	49,142	44,700	...	2,376	47,076	23,011
		78	Chúnián									
		79	Sharakpur									
		80	Kasúr R. S.									
	AMRITSAR ...	81	Amritsar R. S.	83,639	4 11 0	59,202	59,087	46,016	...	1,099	47,115	95,611
		82	Tarn Táran									
		83	Ajnála									
	GURDASPUR ...	84	Gurdáspur R. S.	26,358	4 11 0	78,070	67,391	64,791	...	3,072	67,863	25,886
		85	Batála R. S.									
		86	Shakargarh									
		87	Pathánkot R. S.									
	MONTGOMERY	88	Montgomery R. S.	16,615	6 4 0	28,861	27,700	27,202	...	902	28,104	16,211
		89	Gugera									
		90	Dipálpur									
		91	Pákpattan									
	SIALKOT ...	92	Siálkot R. S.	72,506	5 3 4	78,710	71,830	60,143	...	-2,763	62,906	81,429
		93	Daska									
		94	Pasrúr									
		95	Raya									
		96	Zafarwál									
	GUJRANWALA	97	Gujránwála R. S.	54,460	5 3 9	47,690	49,955	36,812	...	1,890	38,702	65,713
		98	Wazírabad R. S.									
		99	Háfizabad R. S.									
		100	Khángah Dográn									

RAWALPINDI	RAWALPINDI...	101	Ráwalpindi R. S.	18,369	...	52,849	48,748	48,768	...	1,742	50,510	16,606
		102	Attock R. S.									
		103	Kahúta									
		104	Murree									
		105	Pindigheb									
		106	Gujar Khan R. S.									
		107	Fatehjang R. S.									
	JHELUM ...	108	Jhelum R. S.	19,334	6 4 0	85,568	65,212	35,488	378	34,011	69,877	14,669
		109	Pind Dádan Khan R. S. ...									
		110	Chakwál									
		111	Talagang									
	GUJRAT ...	112	Gujrát R. S.	5,352	5 0 0	39,234	36,994	34,726	...	855	35,581	6,765
		113	Khárián R. S.									
		114	Phália									
	SHAHPUR ...	115	Shahpur	3,111	4 0 0	43,722	25,325	26,057	...	1,543	27,600	5,386
		116	Bhera R. S.									
		117	Khusháb R. S.									
			Grand Total ...	7,18,019	...	13,37,435	12,62,410	10,67,649	15,001	94,192	11,76,838	7,32,089

PUNJAB LAND RECORD AND AGRICULTURE DEPARTMENT REPORT FOR 1903.

VIII
8

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REPORT

OF THE

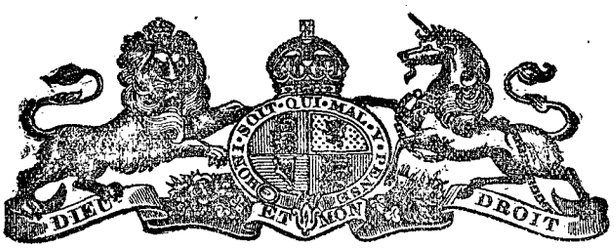
OPERATIONS OF THE DEPARTMENT

OF

LAND RECORDS AND AGRICULTURE, PUNJAB,

For the year ending 30th September 1903.

Published by Authority.



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Lahore:
THE "CIVIL AND MILITARY GAZETTE" PRESS,
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1903.

No. 24.

FROM

J. F. CONNOLLY, ESQUIRE,

Offg. Revenue and Financial Secretary to Government,

Punjab and its Dependencies,

To

THE SENIOR SECRETARY TO THE FINANCIAL COMMISSIONER, PUNJAB.

Dated Lahore, 6th February 1904.

File No.

Revenue and Agriculture.

Agriculture.

SIR,

IN acknowledging the receipt with your letter No. 35, dated the 13th January 1904, of the Annual Report on the Operations of the Department of Land Records and Agriculture for the year ending 30th September 1903, I am directed to say that the Lieutenant-Governor agrees with the Financial Commissioner's opinion that the report is interesting and adequate and a record of a year of useful work, and to request that the acknowledgments of Government may be conveyed to Mr. Renouf in respect thereof.

2. Sir Charles Rivaz will be glad if the attention of Commissioners and Deputy Commissioners is drawn to the remarks contained in paragraph 12 of the report regarding the promotion of Patwaris to certain appointments. It is suggested for the Financial Commissioner's consideration that it should be made a rule that only Patwaris should be appointed to the posts of Siah Nawis or Wasil Baki Nawis unless the Commissioner considered it desirable to sanction a different arrangement in any case that for special reasons might be referred to him by the Deputy Commissioner.

I have, &c.,

J. F. CONNOLLY,

Offg. Revenue and Finl. Secy. to Govt., Punjab.

Punjab Government Press, Lahore—8-2-04—464.—J. B.

No. 35, dated Lahore, 13th January 1904.

From—R. HUMPHREYS, Esquire, Senior Secretary to the Financial Commissioner, Punjab,
To—The Revenue and Financial Secretary to Government, Punjab.

Sub-head No. 491.
File No. 5.

I AM directed to forward a copy of letter No. 3275, dated 18th December 1903, from the Director of Land Records and Agriculture, Punjab, submitting his Annual Departmental Report for the year ending 30th September 1903, and to convey the following remarks.

2. Difficulty still continues to be experienced in obtaining recruits for the Patwari establishment from among the agricultural classes, even though the educational standard required is reduced in their favour. The scheme for restricted recruitment by which the Director hopes to remedy this, among other defects, is under consideration. The efficiency of the Patwaris is described as satisfactory. The improvement of the Patwaris' prospects in the way of promotion must necessarily accompany the demand for education and efficiency, and the Director's remarks on this point in paragraph 12 are of considerable interest. The suggestion that Tahsil Judicial Muharrirs should be recruited from Patwaris has met with a good deal of criticism and the matter is still pending. It is to be regretted that full advantage has not been taken even of the existing rules to give the men an incentive to industry and good conduct.

The amalgamation of the District Patwar Funds into one Provincial Fund is the most noteworthy achievement of the year's administration.

3. Most of the changes which have been made in our system of land records during the year have been necessitated by the Alienation of Land Act. It is interesting to note that mortgages under Section 6 (*a*) of that Act have commenced to be made, but the Financial Commissioner is inclined to doubt whether they have yet become 'very common.' The point will be noticed in the Annual Report on the working of the Act.

4. While testifying to the utility of the abstract village note books, Deputy Commissioners generally do not appear to record their notes on the villages. The importance of these note-books can hardly be exaggerated, but the figures even if recorded correctly and to date lose half their value without some note on the village resources.

5. In paragraph 33 the Director describes the beginnings of an Agricultural Department for the Punjab and shows the lines on which the present work may be expected to develop. Proposals for the appointment of a Deputy Director of Agriculture have been submitted to Government, and until that appointment has been sanctioned and in existence for some time it would be perhaps premature to consider the suggestion for the appointment of an economic botanist in the Punjab.

6. The visit of the Director to the experimental farms in the Bombay Presidency under the guidance of the Inspector-General of Agriculture was an innovation of which the Financial Commissioner heartily approves. Such visits cannot but be, Sir Lewis Tupper thinks, of the greatest assistance to the Director, and he hopes that it may be possible to repeat the experiment in future years.

7. A detailed report of the Lyallpur Experimental Farm and the work done generally during the year in the way of agricultural experiments has reached the Financial Commissioner, but he has not thought it necessary to send it on to Government, as the orders did not require it to be so dealt with and there were no special points which required the orders of Government. A report on the results of three years' working is to be submitted next year. Up to the present satisfactory results are being obtained and the experiments which are being made with a view to improving the staple of cotton are valuable, and it is hoped will result in permanent benefit to the community at large.

8. In view of the impending legislation on the subject of Co-operative Loans Societies the remarks of Captain Crosthwaite reproduced in paragraph 59 of the report are of considerable interest.

9. The report submitted by Mr. Renouf is in the Financial Commissioner's opinion interesting and adequate and is a record of a year of useful work. Sir Lewis Tupper observes that Mr. Renouf has applied himself to his new duties with much zeal and energy and is rapidly mastering the special work of his Department. His efforts during the year deserve the acknowledgment of Government.

Punjab Government Press, Lahore—8-2-04—464.—J. B.

No. 3275.

FROM

W. RENOUF, ESQUIRE, C.S.,
Director of Land Records and Agriculture, Punjab,

To

THE SENIOR SECRETARY
TO THE FINANCIAL COMMISSIONER,
PUNJAB.

Dated LAHORE, *the 18th December* 1903.

SIR,

I HAVE the honor to submit the Annual Progress Report of this Department for the year ending the 30th September 1903.

I have the honour to be,
Sir,
Your most obedient servant,
W. RENOUF, C.S.,
Director of Land Records and Agriculture, Punjab.

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ANNUAL REPORT

OF THE

DEPARTMENT

OF

LAND RECORDS AND AGRICULTURE, PUNJAB.

For the year ending 30th September 1903.

Chapter I.—Prefatory.

Personal.

1. Mr. Sykes held charge of the post of Director of Land Records and Agriculture, Punjab, up to the 27th March 1903, when I took over from him. Chaudhri Sultán Ahmad has held the post of Personal Assistant throughout the year. His examination duties, which have been heavy, have been discharged with judgment and fairness, and he has worked satisfactorily throughout.

Tours.

2. During the autumn months Mr. Sykes visited the Districts of Lahore, Amritsar, Ferozepore and Ludhiána. In the subsequent months he inspected 23 Tahsil and 3 Head-quarter offices. I visited the Districts of Ráwalpindi, Abbottabad, Ferozepore, Delhi, Hissár, Umballa, Gujrát, Jhang and Ludhiána, and inspected eight Tahsíl and seven District offices. My Personal Assistant inspected a number of Tahsíl and head-quarter offices. He also inspected the work of Patwáris and Kánúngos on the spot in the Districts of Lahore, Ferozepore, Ludhiána and Jullundur.

Enquiry into the sufficiency of Tahsíl establishments.

3. In addition to the examination of Revenue records, I have been making enquiries into the sufficiency of existing Tahsíl establishments with a view to strengthening them where necessary. The enquiry cannot be finished in less than three or four years, but reports will be submitted annually to the Financial Commissioner, as far as possible by completed Districts.

Examination of Náib-Tahsíldárs.

4. Heavy recruitment of Náib-Tahsíldár Candidates in the Settlement Department has necessitated the holding of Náib-Tahsíldárs' examinations twice a year for the present. As many as 80 candidates present themselves each time, and this involves a considerable increase in the examination work which has to be done.

Chapter II.—Land Record Establishments.

Patwári candidates.

5. Attention was drawn last year to the congested state of the Candidates' Lists in several Districts, and orders were received to draw up a scheme of recruitment for both Patwáris and Kánúngos, based on the actual number of vacancies. Returns were called for from all Districts, and a report has been submitted to the Financial Commissioner. Nine hundred and twenty-eight candidates were accepted during the year as against 1,386 in the previous year, and efforts have been made in some Districts to reduce the lists to reasonable dimensions. Ráwalpindi, Shahpur and Siálkot, however, with 261,226, and 205 candidates, respectively, still appear to have many more than they require. Taking the Province as a whole, we now have 3,518 candidates for 8,059 posts of Patwári and Assistant Patwári—a proportion of 43 per cent., which is largely in excess. Out of 928 candidates appointed during the year, 298 have not passed the Middle School Examination. It is probable that the 340 new agriculturist candidates account

for a large number of these, but many Deputy Commissioners report some difficulty in obtaining agriculturists in spite of leniency shown in the matter of educational qualification. The largest measure of success in this direction has been obtained in Dera Gházi Khan (77 out of 86), Gujrát (103 out of 138), and Ráwalpindi (187 out of 261). These figures refer to the total number of candidates and not to last year's recruitments. The remedy for all our difficulties in this very important matter will be found in fixing a limit to the number of candidates Our requirements can be met by about two-thirds of the number now added annually to the lists, and this reduction will, at once, enable Deputy Commissioners to secure a larger percentage of agriculturists and a higher standard of education. At the same time, better men will be induced to come forward by the certainty of early employment. It is satisfactory to note that there are now over 80 men on the Candidates' Lists who have passed the Entrance Examination.

Patwári schools.

6. Patwári schools were opened during the year in the Districts of Hissár, Karnál, Umballa, Ludhiána, Kángra, Lahore, Siálkot, Gujrát, Shahpur, Miánwáli and Muzaffargarh. No regular school was opened at Jhang, but an examination was held of all the candidates who had been on measurement work and had satisfied the Tahsíldárs of their acquaintance with practical work. The Settlement Officer of Ráwalpindi reports that the candidates in that District were trained by deputing them with good Patwárís to learn work on the spot. A practical training is, of course, the best that a Patwári can receive, and this is contemplated by the rules, but a certain amount of book-work has also to be done, and an examination should be held. The Settlement Officer will be addressed on this point.

Patwárís' pay.

7. The pay of Patwárís in the Sirsa Tahsíl was raised last year, and their pay in the remaining four Tahsíls of the Hissár District has now been increased to Rs. 15, Rs. 13 and Rs. 12 for Patwárís, and Rs. 10 for Assistant Patwárís as a special case, owing to the severe conditions of life which obtain in the District. The ordinary rule is that the standard rates of Rs. 14, Rs. 12 and Rs. 10 will be introduced at the revision of Settlement. The Deputy Commissioner of Hoshiárpur draws attention to the low scale of pay in his District—Rs. 11, Rs. 10 and Rs. 9, which is the lowest in the Province, and which, I agree with him, constitutes a valid grievance. The Deputy Commissioner is considering the matter and will probably ask for uniform treatment at once, as the next Settlement is not due for another ten years.

Patwari establishments.

8. There have been revisions of establishment in Jhang and Muzaffargarh, and a considerable increase in the Chenáb Colony in accordance with the general sanction of Government to the proportion of one Patwári to every 4,000 acres cultivated. A similar sanction has been extended to the Jhelum Colony.

Efficiency of Patwárís.

9. Satisfactory reports have been received of the efficiency of Patwárís. Returns and annual papers have been submitted, on the whole, with commendable punctuality. In Lahore, a list of all men over 55 years of age has been drawn up, and such of these as are unfit for work have been compelled to retire. There is, however, a natural reluctance to enforce retirement owing to the absence of pension. A new Mensuration Manual is now ready, and arrangements are being made for its publication. It is hoped that it will soon be possible to place in the hands of all Patwárís and Kánúngos a complete collection of all the rules and directions relating to their work.

Conduct of Patwarís.

10. Forty-six dismissals are reported for misconduct, Revenue papers having been tampered with in most cases. There were 44 prosecutions and 6 convictions, but all these were not connected with Departmental shortcomings. There were as many as 33 prosecutions in Siálkot, a conviction being obtained in one case only, under Section 325, Indian Penal Code (serious hurt). The Deputy Commissioner will be asked for a further report as to the nature of the charges. There were the usual number of reductions in grade, transfers and fines for petty offences.

Rewards.

11. Rewards are only given as a general rule during the actual currency of Settlement operations and then only to the extent of the fines realised. At other times, they are given with the Financial Commissioner's sanction for work certified to be outside the ordinary course of their duties, and occasions for granting them are rare. Rewards amounting to Rs. 71 were sanctioned to Patwárís in the Sirsa Settlement, as the Settlement Officer had no funds available. Gratuities amounting to Rs. 6,920 were granted to 61 Patwárís on retirement. The rules as to these gratuities have, as usual, been worked liberally.

Promotion obtained by Patwárís.

12. Out of 95 Kánúngo vacancies, 59 were given to Patwárís—which is just below the prescribed two-thirds proportion. Of 229 accepted Kánúngo candidates during the year, only 106 were Patwárís, whereas the majority should have been selected from this class. The posts of Siáh Nawís and Tahsíl Wásil Báqi Nawís are practically reserved for Patwaris and 13 such appointments were made. There is every reason to believe that Patwárís' claims are frequently overlooked owing to the intrigues of officials at head-quarters. A striking instance of this has been reported by the Commissioner of Lahore, who has ascertained that out of 43 posts of Siáh Nawís, Wásil Báqi Nawís, and Office Kánúngo in four Districts in his Division, only 15 are held by Patwárís. The necessity for safeguarding Patwárís' interests, and for ensuring them a prospect of promotion and a reward for good honest work is apparent. The Financial Commissioner has recently suggested to Commissioners the general desirability of recruiting Tahsíl Judicial Moharrirs from the Patwári establishment with a view to securing men with a knowledge of Revenue work. Such a knowledge is important for men who have to handle files of complicated partition cases and boundary disputes. The files of these cases are now usually left with the Office Kánúngo on account of the inability of the Judicial Moharrir to deal with them, and the amount of work done on the spot is consequently reduced to a minimum. This step, while improving the efficiency of the Moharrirs, would also tend to improve the prospects of the Patwárís.

Patwár Fund.

13. The income of the Patwár Fund during the year amounted to Rs. 13,01,264 and the total expenditure to Rs. 13,42,937. The balance at the close of the year was Rs. 6,70,777. The year is marked by the amalgamation of the District Patwár Funds into one Provincial Fund, administered by the Director of Land Records. This desirable change has only been effected after a very lengthy correspondence extending over several years. It has been decided to pay the entire cost of the Field Kánúngo Agency from the amalgamated Fund. Detailed rules for the working of the scheme are under consideration and should issue very shortly. Pending their appearance, the Director of Land Records has been authorised when necessary to transfer sums from one District to another. The Chenáb Colony Patwár Fund has recently been incorporated in the general Fund.

Kánúngo candidates.

14. There are 701 Kánúngo candidates, the majority of whom are Patwárís. The others have all passed the Entrance Examination, but this qualification is still rare among the Patwárís. The training of the candidates is kept steadily in view, and they are deputed to current Settlements in large numbers. The *personnel* of the Candidates recruited during the year has already been discussed in paragraph 12. The Candidates' Lists contain a fair number of men who have passed educational tests higher than the Entrance Examination.

Examination of Kánúngos.

15. Examinations of candidates for the appointment of Kánúngo were conducted either by the Director or his Personal Assistant at the following Centres:—Dera Ismáil Khán, Hafizábád, Shahpur, Dera Ghazi Khán, Ráwalpindi, Umballa, Lyallpur, Abbottabad and Amritsar. The total number of candidates examined belonging to the Punjab and North-West Frontier Province was 264, of whom 161 completed the Examination and 55 were partly successful. The total number exceeds the past year's figures by 73. It would have been still larger, but for the restrictions laid down for the first time this year by this office Circular No. 1 of 1903, which prescribes that only such candidates will be examined as have, at least, had one year's practical training in the field.

16. Twenty-six Kánúngos were accepted candidates for Naib-Tahsíldár-ships or were appointed as Naib-Tahsíldárs during the year, and six were promoted to other good posts, such as Readers to Extra Assistant Commissioners, Sadr Wasil Baqi Nawís, Sadr Kánúngo, &c.

Promotion of Kánúngos to higher posts.

Chapter III.—Utilization of Land Records.

17. These records are generally reported to be in good order. Fresh copies of the *Riwáj-i-Am* and *Tanqih haquq-i-Muzarián* have been made in Gujrát.

Record of rights.

18. The total number of mutations attested during the year was 599,167 against 559,044 last year. The District figures show a considerable increase in the total number of mutations attested. The increase in the Districts of Jhang, Gurgaon, Miánwáli and Ráwalpíndi is due to the Districts being under settlement. In Gujrát, the increase is attributed in part to alienations of land in order to purchase brood mares for the Jhelum Colony. The general increase may be attributed to the continuance of plague, and to a better understanding of the Land Alienation Act. This Act was at first supposed to prohibit all transfers, but mortgage under Section 6 (*a*) of the Act have now become very common. The heaviest balances are in the Hoshiárpur, Ferozepore, Ráwalpindi and Jhelum Districts, but they are not excessive. Twelve Extra Náib-Tahsíldárs were appointed to Districts where balances were heavy. The work is well up-to-date, and its quality is very fair.

Mutations.

19. Detailed *jamabandís* were prepared for 10,467 villages against 11,527 villages in the last year. In the Districts of Gurgáon and Miánwáli, detailed *jamabandís* for all estates were made in view of the approaching Settlement. In Ráwalpindi, and in villages included in the Jhelum Colony, no *jamabandís* were prepared at all. In the Jhang District, no *jamabandís* have been prepared except the "measurement *jamabandís*." In several districts, the directions relating to the attestation of *jamabandís* by *girdáwars* and Revenue officers are not thoroughly understood. This is partially due to the delay which occurred in the issue of Circular No. 28, in vernacular.

Annual records.

20. Instructions issued in 1901 authorised Deputy Commissioners to dispense with the annual *jamabandís* of villages subject to di-alluvion if the di-alluvion files prepared under the rules prescribed in the District enable them to do so. This option has generally been adopted except in the Districts of Karnál, Umballa and Gurdáspur, where it has been found that the di-alluvion files prepared under the rules do not contain the necessary information. There is, however, no necessity to prepare an annual *jamabandi* for the whole of such villages. It is only necessary to prepare a detailed revised *jamabandi* for those holdings which are affected by river action. The Patwári should retain one copy of the *jamabandi* so prepared and send another to Sadr to be placed with the last detailed *jamabandi* filed in the District. This will reduce the work and give considerable relief.

Annual jamabandís in di-alluvion villages.

21. A few alterations have been made during the year in the form of the Village Land Records, but none are of any great importance. Most of these have been necessitated by the provisions of the Land Alienation, and, in particular, by the creation of the technical "Agriculturist."

Changes in village records.

22. Agricultural statement "D," which was designed to show varieties of tenure, has been discontinued with the sanction of the Secretary of State. Columns 2 and 3 of Statement No. 6 in the Circle, Tahsil and District Note-books have accordingly been cancelled. The opportunity was seized of simplifying Part III of the same statement (Revenue assignments), by reducing the number of heads from five to three. The three which remain are—in perpetuity; for life or lives, and for term of settlement. The assignments falling under old heads 1, 2 and 4 are in future to be included under head No. 1.

Simplification of Form No. 6 in the village note-books.

23. It having been brought to notice that mutations are frequently allowed to remain pending for as long as five or six years on account of disputes or absence of parties, a new side head No. 10 (*a*) has been added in the Quarterly Return of the maintenance of village records to show the number of unattested mutations pending for two years or more, and Deputy Commissioners have been asked to give special attention to the early disposal of such arrears.

New side head 10 (*a*) added in the Quarterly Return of the maintenance of village records.

24. It has been found that the statement showing the number of memoranda received from Registration Offices, and the result of mutation proceedings taken thereon, submitted as an annexure to the Quartely Statement of the maintenance of village records, serves no useful purpose, and it has been discontinued with the assent of the Inspector-General of Registration.

Discontinuance of statistics regarding Registration Memoranda.

25. In the case of an "agriculturist" who has obtained a permanent alienation of land from a member of an agricultural tribe after the commencement of the Act (June 8th, 1901), his power of subsequent permanent alienation is restricted under the proviso to Section 3 of the Act. To enable Revenue officers to identify such parcels of land with facility and thus check evasions of the Act, Patwáris have been directed, where the alienor is an "agriculturist," and where the alienation was effected after June 8th, 1901, to note in the Remarks column of the *jamabandi* whether the land was or was not acquired from a member of an agricultural tribe. Further, plots acquired from members of agricultural tribes are to be kept in separate holdings.

Additional remarks in the jamabandi necessitated by the Land Alienation Act.

26. Provision has also had to be made to facilitate the exercise of the discretion given to the Deputy Commissioner under Section 13 of the Act whereby he can, of his own motion, eject a mortgagee, lessee or farmer in possession after the expiry of the term for which he is entitled to hold under his mortgage, lease or farm under Sections 6, 11 or 12 of the Act. Directions have accordingly been issued to the following effect:—"In the case of a mortgage," "lease or farm effected with possession after June 8th, 1901, by a member of" "an agricultural tribe to a person who is not a member of an agricultural" "tribe, whether he be an agriculturist or not, the Patwári shall enter in the" "Remarks column of the *jamabandi*, a note stating the date of the commence-" "ment and, except in the case of a mortgage under Section 6 (*c*), the date of" "expiry of the term of possession."

27. Considerable difficulty has been experienced in the working of the Land Alienation Act in determining whether a person claiming to be an "agriculturist" really possesses the status which he alleges. The main question is whether his direct ancestor was recorded as an owner or occupancy tenant of land at the prescribed Settlement, and different methods of establishing this have been adopted in various Districts. It has now been decided that certificates in regular form shall be granted to applicants after due enquiry, such certificates being obtainable at Sadr, or at the Tahsíl, if the Settlement records are preserved there. The certificate will remain with the person in whose favour it is, and he will thus be able to use it on several occasions, and in registration as well as mutation proceedings.

Certificates of status granted to "agriculturists."

28. A genealogical tree for occupancy tenants is being prepared in the Jhelum District as villages come under quadrennial attestation. It is duly attested by Revenue officers and filed with the *jamabandis*. This document had never been drawn up before in the District, and its preparation was only decided on after the record of rights of the recent revised Settlement had been filed.

Genealogical table of occupancy tenants in the Jhelum District.

29. A general enquiry was contemplated last year into the alleged failures of *sailáb* in riverain tracts in consequence of the opening of perennial canals. The enquiry was ultimately abandoned, but the annual records and *girdawári* papers of riverain villages in the Ludhiána and Ferozepore Districts which were

Failures of sailáb owing to the opening of perennial canals.

scrutinised in this connection, showed that areas classed as *sailáb* at the time of Settlement continued to be classed as such even if they were not regularly flooded once in the course of the year. Instructions were issued by Mr. Sykes that, if land did not receive *sailáb* water once at least in any one year, the crops on it should be returned as *báráni*, and if land was not flooded for four consecutive years, it should be entered as *báráni* in the quadrennial *jamabandi*. If an enquiry is held hereafter, the data which will be collected in this way should throw considerable light on the subject.

Abstract village note-books.

30. Abstract Note-books are reported up-to-date except in the Gujránwála District. It cannot be said that notes are generally recorded in them by Deputy Commissioners. Notable exceptions are Karnál and Hoshiárpur. Revenue Assistants have, however, made a certain number of entries. Under existing orders, special forms suited to the circumstances of each District are to be proposed by the Settlement Officer, as each District comes under Settlement. One of these revised forms is already in use in the Jhelum District, and the Deputy Commissioner says he has found the books of the utmost use in making recoveries of suspended revenue. The Deputy Commissioner of Lahore reports that his Pargannah Books were of great assistance in making suspensions and remissions of Land Revenue. The copying of Settlement Officers' notes into the Abstract Note-book in the Districts of Sháhpur, Dera Gházi Khan and Hissár, which was taken up last year, has been completed.

31. No fresh serious agricultural defects have been reported.

Survey marks.

32. Survey marks are reported in good order, except in the Hissár, Lahore, Gurdáspur, Gujránwála, Gujrát, Miánwáli and Sháhpur Districts, where the matter is receiving due attention.

Chapter IV.—Scientific enquiry under Provincial or Imperial Direction.

Agricultural Department.

33. We have the beginning of an Agricultural Department in the Experimental Farm at Lyallpur, and the small staff of three Native Assistants. The farm has now been two full years in existence. The Manager was lacking in experience at first, but time should remedy this. The two other Agricultural Assistants were working at Hissár under the supervision of the Inspector-General of Agriculture at the time of the last report. They have now been transferred to Lyallpur, as the Hissár Farm has been closed, and the experiments carried on in the hybridisation of wheat and cotton have also been removed to Lyallpur. One of the Assistants is at present at Surát receiving a course of instruction in practical Entomology under the Entomologist to the Government of India. On his return, he should be capable of demonstrating the various methods of combating insect pests, and of studying and reporting intelligently on their habits to the Goverment Entomologist. He will also benefit from the experience which he will have gained of the working of Experimental Farms in Bombay. I should like to procure a somewhat similar training next summer for the second Assistant. I hope that we shall have secured the services of a Deputy Director of Agriculture before my next report. We have done a great deal of useful preliminary work, and a point has been reached where we urgently require expert supervision and advice. With a purely agricultural community like that of the Punjab, and a class of cultivators not generally lacking in shrewdness and enterprise, I think that it is a question whether we ought not to follow the example of the United States, Canada, Australia, France and other agricultural countries in creating a thoroughly well manned and efficiently equipped Agricultural Department. We should probably do well to begin

at once with an Economic Botanist in addition to a Deputy Director of Agriculture, leaving the experience of these officers to guide us as to the direction in which we should extend our operations in the future. It cannot be too strongly emphasized that agricultural research work must be done with extreme care, skill and thoroughness, if any good results are to ensue.

Tour of the Bombay Experimental Farms.

34. By the kindness and courtesy of the Bombay Government, a number of Indian officials interested in agriculture were invited to make a short tour of the Bombay Experimental Farms in the first fortnight of November, under the guidance of the Inspector-General of Agriculture. I am very glad that I was able to join the party, and take advantage of such an exceptional opportunity. The Bombay Farms are admittedly the best-managed in the country, and the party comprised the majority of the experts on agricultural subjects employed under Local Governments and the Government of India. Under these circumstances the tour could not fail to be extremely instructive, both as to the management of Experimental Farms, and as to the proper aims and scope of of an Agricultural Department in India.

Lyallpur Experimental Farm. Wheat.

35. The second Annual Report on the Lyallpur Farm was submitted to the Financial Commissioner only a few days ago, and it is unnecessary for me to do more than give a brief summary of what has been done during the year. The Punjab being the principal wheat-producing Province in India, most attention has naturally been given to this crop. The classification of the various kinds of wheat grown in the Province is in progress, but cannot be made final until we have better advice than is at present available. Wheat variety experiments have advanced a stage, and a certain number of varieties have been selected as superior kinds suited to the Colony. Every endeavor is made to improve these by selection. Messrs. Ralli Brothers have also kindly given their opinion as to the commercial value of various samples. I trust that we shall soon be in a position to grow for seed distribution, but it is obviously unsafe to do this until we are sure that we have something in a fairly marked degree superior to what is ordinarily produced. Last year's Hissár hybrids are being cultivated with great care. The usual manurial and rotation experiments have been continued.

Cotton.

36. The restricted export of high class cotton from America has compelled the Home manufacturers to look round anxiously for new sources of supply and, in response to this, great efforts are being made in some Provinces to improve the local, or to acclimatise exotic varieties. A certain amount of cross-breeding was done at Hissár last year, and the plants are now at Lyallpur where further crosses were made this autumn. The Inspector-General of Agriculture was particularly struck with the encouraging results of his trials of American cotton at Hissár, and he considers that this line of experiment is deserving of every attention in Northern India. The results of the Cawnpore experiments are to the same purport, and there is no doubt but that cotton offers one of the most attractive subjects of enquiry. It is unnecessary to urge the immense benefits which would accrue in India to cultivator and manufacturer alike if a better staple could be introduced.

Other experiments.

37. Experiments were conducted with sugar-cane, a promising crop in the Colony, Indian corn, barley, *toria*, gram and other staple crops, besides tobacco, potatoes and various kinds of vegetables. A Mukaddam was appointed who should be of great assistance to the Manager. Six squares adjoining the farm were reserved for seed growing, and I expect to take up one of them next year.

Land reserved at Sargodha.

38. Some land has been reserved at Sargodha, but I doubt whether we actually require another Experimental Farm so close to Lyallpur. If we have a second farm of this kind it would be advisable to locate it in the East Punjab. The land at Sargodha will probably be useful for seed farm purposes, so it is best to retain a lien on it for the present.

39. Agricultural shows have been arranged during this winter as an experiment at Lyallpur and Ferozepore. As produce shows, these have not

been a success in other Provinces on account of the absence of guarantee that exhibits are self-grown. We shall be in a better position to develop these shows when our Agricultural Department is more fully organised and when we have gained more experience. The ordinary District Cattle Fair offers a very favourable opportunity for exhibitions of implements, carts, ploughs, seed and produce, and generally for awakening an interest in agricultural progress.

Agricultural shows.

40. Some remarks were made on the subject of rust in wheat in paragraph 18 of last year's Report. The Cryptogamic Botanist to the Government of India visited Hissár this spring and gave special attention to this matter. He is inclined to think that the quality which we require in the Punjab is drought-resistance rather than rust-resistance. At his request, enquiries were made from all districts as to the extent to which rust is a recurring cause of serious damage. The replies showed that Kángra is the only district in which this is the case, this being doubtless due to its exceptional climatic conditions. The popular ideas as to the cause of rust were in support of Mr. Sykes' previous conclusions. That drought-resistance is fully appreciated by the peasantry, is evidenced by the fact that some of the varieties of wheat most in favour with the colonists on the Chenáb have been chosen partly on account of their power of withstanding any possible irregularity or shortness in the supply of canal water.

Rust resistance in wheat.

41. Some useful information was elicited during the year with reference to the efforts made to introduce American maize in the last twenty years. Mr. Watson, Settlement Officer, Hazára, having noticed the large areas sown with American maize, had a special *girdawári* made which showed that about half of the total maize cultivation in Hazára is of American maize, the proportion being much higher if we take only the uplands of the Abbottabad and Mansehra Tahsíls. It is, however, to be regretted that the plant is reported to be deteriorating in Hazára. I believe that American maize has also established itself in the hills around Simla. This is a striking instance of the readiness of the native agriculturist to take up a good improved seed, even if we bear in mind the immense superiority of the American to the local variety. The same seed which was sent to the hill districts was issued repeatedly to cultivators in the plains, but with no success as far as I have been able to ascertain. A prolonged experiment made in the Lahore Agri-Horticultural Gardens proved that the best results were obtained by sowing early in April and cutting in August. But, even then, the outturn was not very superior to that of the local varieties. The plant has been able to fully indulge its slow habit of growth in the hills. In the plains, conditions have been less favourable and it is clear that we must resort to careful acclimatisation and selection for the quicker growth which is required. We may perhaps be able to get advice as to a favourable variety to begin with, a variety in which the desired habits have already been encouraged.

American maize.

42. A small quantity of Australian wheat was tried in the Gujrát District. The outturn was reported good, but it was said that the grain did not keep well. Attention will be given to this point at Lyallpur, where some of the Australian wheats were very fine indeed.

Australian wheat.

43. The American varieties of sweet potatoes noticed last year, were tried at Lyallpur, but with moderate success, perhaps as the sowings were rather late. The tubers were not received with much favour on account of their difference in colour from the country sweet potato.

Sweet potatoes.

44. During the last twenty years we have been trying in various ways to introduce a superior kind of date into the Punjab.

Improvement of date-palm cultivation in the Punjab.

(*i*) Seeds of dates from Arabia, Tunis, Egypt and the Persian Gulf, have been distributed regularly to Districts.

(*ii*) Offsets have also been imported and distributed.

(*iii*) The Canal Department have planted a number of Arabian date groves.

(*iv*) Mr. Sykes in 1901 planted a grove on the banks of the Chenáb some five miles from Mooltan with about 80 offsets imported from Muscat.

The result has not been success, nor has it been failure. As to the first three experiments the seeds have germinated well and offsets have struck. A fair percentage of healthy trees have grown up in some localities. But, on the other hand, fruiting has been most unsatisfactory, the fruit being raw and falling off before ripening or being of indifferent quality. Mr. Sykes' experiment resulted in failure owing to the selection of a locality liable to floods. I saw the plantation on August 6th, and I found only two plants alive. They have been transferred to the Deputy Commissioner's Kacheri compound.

45. A perusal of the authorities on date cultivation makes it very clear that the successful cultivation of dates in Arabia is due to the assiduous care bestowed on the date palm, particularly in the early stages of its growth and at flowering time. In the Punjab, the palm is self-produced and very little trouble is taken beyond keeping off birds when the fruit is ripening. In Arabia, young trees are systematically grown from offsets, and not from seed; these are watered once or twice daily for a month or two, and are manured at regular intervals. They are planted in selected places. When the trees flower, artificial fertilisation is resorted to and the branches are thinned. The tree is also watered and manured at suitable times. It is apparent that, although the date-palm grows well enough in the Punjab, we cannot expect to grow fruit equal to the Arabian fruit unless we adopt the Arabian methods of cultivation, and no effort has ever been made to do this. It appears to me that if we do anything further, our only course is to send a good *máli* to the Persian Gulf to learn all about date cultivation. Success cannot be guaranteed, but there appears to be a good chance of it. If we are successful, native gentlemen and the better class of zamíndárs will probably be anxious to plant groves of their own and to learn the Arabian method of cultivation, and the industry may spread. There is no doubt as to the great superiority of the Arabian date, the export of which to Europe is large and valuable, whereas no Mooltan dates are exported from India.

Distribution of castor cake as a manure.

46. With a view to creating a market for castor cake, which is manufactured in large quantities at the Punjab Oil and Flour Mills, Lahore, the Manager of the Mills offered me one hundred maunds for free distribution to selected agriculturists for manurial purposes. This was allotted to Lahore and Amritsar, and distributed in the early summer months. Thus far, one favourable report has been received from Lahore, and it will be interesting to watch if any buyers come forward.

Aeromotor at Miánwáli.

47. An experiment with a windmill pump will be tried at Miánwáli under the supervision of the Deputy Commissioner, Captain O'Brien. Twelve hundred rupees have been provided for this in the current year's budget, and arrangements are now being made for its purchase. A wind-gauge has been kindly lent by the Meteorological Department.

Malta oranges.

48. An order for orange trees has been sent to Naples by the Lahore Agri-Horticultural Gardens and the Gujránwála District Board, with a view to renewing the strain which has been such a success in the Punjab.

Paspalum Dilatatum.

49. A small plot was sown with paspalum in my office compound three years ago. It was irrigated in the first year and showed signs of strong growth as an irrigated crop. It has not been irrigated for the last two years. Last year it showed some signs of stress from drought, but this year there have been two abundant crops. The grass grew about four feet in height. It was cut in August and a second time in October.

It was grown on the Lyallpur Farm, where it has not been irrigated since May last, and it has held its own against indigenous weeds, although it

cannot altogether be described as flourishing. It has also established itself on a very damp plot in the date plantation near Mooltan. So far, the grass has done fairly well without irrigation when once established, but this has been in localities with fair rainfall, and in plots adjacent to irrigated crops. Some trials will now be made with acclimatised seed and without the help of irrigation. The Deputy Commissioner of Miánwáli also reports that the grass is growing very well as an irrigated crop, but has failed without irrigation. He is continuing his experiments. The grass has been adjudged a failure in other Provinces, and it is doubtful if it is of any value in India.

Cassava.

50. Sixty-six cuttings of twenty-two varieties of cassava were received from Mr. Robert Tomson of Jamaica in July 1902, and they were planted in my office compound. The winter frost killed most of the plants, and it was only extreme care that kept a few alive. Cuttings were obtained from the survivors and planted in February. The cuttings have grown into very strong robust plants, attaining to a height of about 15 feet. The roots of some of the plants which were dug up show signs of a healthy growth, about ten tubers of various sizes having formed. The plants are now ready for harvesting and the tubers will be tested for the quantity of starch they contain. The extreme sensitiveness of the plant to cold appears to be a serious drawback.

Salt-bush.

51. Experiments with salt-bush began in 1882. The only partial successes, although seed was sown repeatedly in several Districts, have been in Hissár and Mooltan and in the Lahore Agri-Horticultural Gardens. In all other Districts the seed did not germinate or the seedlings died at a very early age. As remarked in paragraph 24 of last year's Report, our efforts to introduce salt-bush have not gone beyond the stage of cultivation in nurseries and pot-yards. It has been arranged to give the bush a final practical test at Hissár and Mooltan where the dry climate appears to be most favourable to it. A selected piece of *kallar* ground will be planted in three different ways, one portion with seed, another with seedlings and a third with cuttings. The experiments will be conducted with great care and all the water that will be given will be a little in the early stages of growth. It is claimed for the plant that it thrives and spreads with very little water; that it extracts noxious salts from the soil, and that it is an excellent cattle food. Whatever its success may have been in other countries, and it has apparently proved most valuable in South Africa, it is almost certain that it is not adapted to the climate and soil of India. If the experiments at Mooltan and Hissár fail, we may give up all further trials with it.

English fruit trees.

52. Four thousand young fruit trees were as usual distributed from the Mahásu Orchards. Enquiries were made from several officers, Deputy Commissioners, officers in the Police, Education and Public Works Departments, to ascertain whether the trees would be acceptable. The young trees all did fairly well in the hills in the first year, but there is nothing on the file to show how they bear fruit. I propose to make enquiries on this point from persons who received trees some ten or fifteen years ago. This year, applications were invited by an advertisement in the *Civil and Military Gazette*, and the number of applicants has been larger than usual.

Crop experiments.

53. The usual crop experiments to ascertain the yield of staple crops were carried out in twelve districts under the supervision of Assistant or Extra Assistant Commissioners. In addition to these, a large number of experiments in both harvests were conducted under the supervision of Settlement Officers in the districts of Gujránwála, Rawalpindi and Jhang. Some of the experiments gave abnormal results, and it is probable that the plots were not selected with sufficient judgment. The attention of the officers conducting the experiments has been drawn to the directions on the subject contained in paragraph 12 of Revenue Circular No. 13. These directions are that the plot should be an average plot in an average village in that part of the district where the crop under enquiry is most widely cultivated.

Economic enquiries.

54. The Reporter on Economic Products to the Government of India was supplied with the articles entered in the programme for 1902-03 and in his various indents. Botanical specimens of various plants were also supplied to him for the Calcutta Museum. A programme of the articles to be collected for the Economic Section of the Lahore Museum was prepared under the directions of Mr. Sykes. It has been sent to Mr. Burkill for his advice. Collections will begin when the list has been approved by him. At the request of the Entomologist and Cryptogamic Botanist, to the Government of India, some enquiries have been instituted into fungoid diseases and insect pests, and specimens of insects and diseased plants have been forwarded to those officers for investigation. A collection was made of Botanical specimens of plants and products used as food during the famine, and they were sent to the Reporter on Economic Products to the Government of India for identification.

Meteorology.

55. There are 189 rain-registering stations in the Province. Of these, Commissioners inspected 5, Deputy Commissioners and Settlement Officers, 42, Assistant Commissioners and Extra Assistant Commissioners, 12, and the Director of Land Records and his Personal Assistant, 33. The reports received show that the rain-gauges and registers are kept properly, and that the rainfall is correctly measured.

Chapter V.—Agricultural Education and Publication of Agricultural information.

Agricultural education.

56. The majority of the District Reports disclose a reluctance on the part of the agricultural classes to take advantage of the primary education offered to them. The chief exceptions are Hoshiárpur, Ludhiána, Amritsar, Gujrát and Siálkot. In the last named District, there are as many as 157 Patwáris and 10 Kánúngos who are agriculturists. On the whole, the teaching is suitable for boys designed for Patwáris and Kánúngos, if they advance to the Middle Examination. A very simple Mensuration Primer is prescribed which gives clear ideas as to the duties of the subordinate Revenue establishment. It is impossible to teach much about the principles which underlie the practice of agriculture to young uneducated lads, and it cannot be expected that non-agriculturist teachers will impart much knowledge of practical agriculture to sons of agriculturists. There are, however, three agricultural Readers which are suitable, and good, as far as they go. The "Kheti ki Kitáb" is more advanced and is read in the 5th Primary Class. In Amritsar, a Patwári is sent round to teach the Schoolmasters land measuring, and this appears to be a useful practice. Survey equipment and a copy of a part of the village map have been supplied to schools in several districts. This part of the instruction is probably that which is of the most practical use. Object Lessons are fairly well taught.

Distribution of pamphlets.

57. A short simple pamphlet on cattle diseases and on the care of cattle has been written by Veterinary Captain Walker, Superintendent, Provincial Circle, for the use of zamíndárs. It has been translated into Urdú, Hindí and Gurmukhí. The attention of District Boards has been directed towards this book and most of them have purchased copies for circulation and distribution. The District Board of Gurgáon also distributed free to intelligent zamíndárs, 150 copies of Captain Buck's pamphlet on manures and 40 copies of a pamphlet on arboriculture.

Chapter VI.—Miscellaneous.

Ledgering.

58. Good progress has been made in ledgering work in my office. Ledger files on all subjects of agricultural and commercial interest have been opened, and these have already proved useful on several occasions.

Agricultural banks.

59. Captain Crosthwaite has given the following interesting account of the Agriculturist Co-operative Societies in the Bhakkar and Leiah Tahsíls.—

"There are now four Agricultural Co-operative Credit Societies working with varying degrees of success. I believe, however, that the Dhandla Society can now be left almost entirely to manage itself. I have for the last two years only inspected the Society's books and had meetings with its President, Ahmad Khan Dhadla and his Committee. The Society commenced operations in 1900 with 79 members and the number is now 383. It has risen steadily each year; and I have now given permission for the enrolment of members belonging to three other adjacent estates. The capital of the Society subscribed in grain by its members has risen from Rs. 350-10-0 to Rs. 1,081-6-0. During the first three years the turn-over in loans was Rs. 1,617, of which Rs. 992 was for seed, Rs. 395 for bullocks and the remainder for the redemption of a holding. Interest or "Munáfa" has been taken at one seer of wheat per rupee. The income under this head is Rs, 187. No bad debts have been made. No borrower has refused to pay. The fact that men from all the estates adjoining wish to join shows that the Society must have done good work. They have built themselves a granary and a small office at Dhandla. The experiment is as yet still on a small scale. The accounts are kept in Hindí by the village weighman and in Urdú by the Secretary, who can read and write. Of the remaining Societies those belonging to Sultán Ahmad Khan Kahiris villages of Rang Shah and Marhánwáli are smaller, but promise to do well. I have not been able to see them recently, nor that of Paindu Shah."

District gardens.

60. The Shahdara gardens received a grant from Government of Rs. 2,000 for improvements. The accounts of the various gardens noticed annually in this report may be tabulated thus :—

	Income.	*Expenditure.*
Shahdara	1,020 3 11	1,887 2 10
Shalimar	2,973 8 0	4,676 11 7
Kudsia	1,349 0 0	3,441 0 0
Roshonara	2,205 0 0	7,434 0 0

LAHORE:
4th December 1903.

W. RENOUF,
Director of Land Records and Agriculture, Punjab.

QUINQUENNIAL RETURN.

TABLE SHOWING THE STATISTICS OF EXISTING PATWARI AND FIELD KANUNGO CIRCLESFOR THE AGRICULTURAL YEAR ENDING JUNE 1903.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
District.	Number of Field Kánúngo Circles.	Number of Patwáris.	Area and Revenue (00's omitted). Area in acres. Total.	Cultivated.	Total assessment.	Number of fields.	Number of khatauni holdings.	Average per Field Kanungo. Fields.	Khatauni holdings.	Average per Patwari. Fields.	Khatauni holdings.	Rate of Patwári Cess per cent. on annual value.	Remarks.
					Rs.								
Hissár	15	306	33,151	26,139	7,716	435,579	273,807	29,039	18,254	1,423	895	2-5-6 to 3-2-0	Rs. 2-9-8 in four tahsíls, Rs. 2-5-6 in Budhláda and Rs. 3-2-0 in Sirsa.
Rohtak	10	242	11,542	9,655	9,574	711,056	290,534	71,105	29,053	2,938	1,201	1-10-0 to 1-12-0	Re. 1-12-0 in Sámpla and Jhajjar, Re. 1-10-0 in Rohtak und Re. 1-8-0 in Gohána.
Gurgáon	14	310	12,415	10,014	12,094	1,091,321	336,146	77,952	24,010	3,520	1,084	2-0-0	
Delhi	11	225	8,157	5,463	8,504	1,134,884	272,133	103,171	24,739	5,044	1,209	2-0-0	
Karnál	15	333	20,154	11,548	10,727	1,146,409	335,202	76,427	22,347	3,443	1,007	* 2-2-0 to 2-11-9	* Rs. 2-2-0 in Karnál and Pánipat, Rs. 2-11-9 in Indri, Rs. 2-11-4 in Thánesar, Rs. 2-5-6 in Kaithal and Rs. 2-11-4 in Pahowa.
Umballa	15	356	11,127	6,271	9,607	1,379,072	407,500	91,938	27,166	3,874	1,145	2-5-6	
Simla	1	8	490	100	175	48,111	9,489	48,111	9,489	6,014	1,186	* 2-2-0 to † 2-8-0	* Simla and Kotgarh. † Kotkhai.
Kángra	16	315	24,678	5,902	9,263	2,210,735	447,733	138,171	27,983	7,018	1,421	1-9-0 to 2-9-8	
Hoshiárpur	20	461	14,304	7,296	14,296	2,945,644	801,527	147,282	40,076	6,390	1,739	* 2-2-0 to † 2-1-4	* In Una. † In other tahsils.
Jullundur	14	402	8,703	6,975	14,877	2,040,805	557,178	145,772	39,798	5,077	1,386	1-13-7	
Ludhiána	14	300	8,910	7,655	11,103	1,479,592	354,815	105,685	25,344	4,932	1,183	1-9-0	
Ferozepore	16	356	26,118	21,855	11,798	1,350,591	458,250	84,412	28,641	3,794	1,287	*2-5-6 to † 3-3-8	* In Ferozepore, Moga, Zira and Muktasar. † In Fázilka.
Montgomery	13	207	29,532	6,843	4,235	920,106	136,471	70,777	10,495	4,445	659	3-2-0	
Lahore	15	321	23,001	13,226	10,306	1,806,670	430,211	120,445	28,681	5,628	1,340	2-8-0	
Amritsar	11	305	9,977	7,886	12,605	1,426,676	544,632	129,698	49,512	4,678	1,786	2-5-6	
Gurdáspur	17	426	11,675	8,510	15,383	1,578,049	615,865	92,826	36,227	3,704	1,446	2-5-6	
Siálkot	17	403	12,648	9,501	14,928	1,879,652	669,128	110,568	39,360	4,664	1,660	2-9-8	
Gujránwála	17	317	19,046	11,544	10,713	1,172,679	313,955	68,981	18,468	3,699	990	2-9-8 to 3-12-0	
Gujrát	10	232	12,319	8,435	8,423	1,114,517	418,012	111,452	41,801	4,804	1,802	2-5-6	
Shahpur	7	133	20,190	6,033	4,843	384,017	136,610	54,860	19,516	2,887	1,027	2-0-0	
Jhelum	13	249	25,377	10,519	9,164	1,645,650	425,807	126,588	32,754	6,609	1,710	3-2-0	
Ráwalpindi	15	327	32,393	13,301	9,753	1,503,475	603,900	100,232	40,260	4,598	1,847	3-2-0	
Miánwáli	11	176	49,771	7,423	4,441	703,658	211,284	63,969	19,208	3,998	1,260	2-8 0 to 3-2-0	Fixed Rs. 2-8-0 and fluctuating Rs. 3-2-0 in Leiah and Bhakkar; Rs. 2-8-0 in Isa Khel and Miánwáli.
Jhang	27	441	43,318	18,214	14,165	2,634,087	219,673	97,559	8,136	5,973	498	2-10-6 * / 3-12-0 †	* District. † Colony.
Mooltan	19	326	38,105	9,715	8,084	1,157,129	170,341	60,901	8,965	3,549	523	3-2-0	
Muzaffargarh	12	249	20,193	5,167	6,785	928,498	272,984	77,375	22,749	3,729	1,096	3-2-0	
Dera Gházi Khan	11	180	34,789	9,842	5,203	568,333	222,354	51,667	20,214	3,157	1,235	3-2-0	Pacca Rs. 2-8-0, Kacha Rs 3-2-0.
Total	376	7,906	562,083	265,022	2,58,765	35,396,995	9,935,541	94,141	26,424	4,477	1,257	...	

STATEMENT SHOWING THE ANNUAL ABSTRACT OF INCOME AND EXPENDITURE OF THE PATWARI FUND OF THE PUNJAB FOR THE YEAR 1902-03.

Division.	District.	Number of Tahsil.	Name of Tahsil.	Balance in hand at beginning of year.	Rate of Patwári Cess (give detail for each Tahsil).	Demand.	Total Receipts.	Expenditure on salaries of Patwáris.	Contribution to Kánúngo Establishment.	Other Charges.	Total Expenditure.	Closing Balance.
				Rs.	s. a. p.	Rs.	Rs.	Rs.	Rs	Rs.	Rs.	Rs.
DELHI ...	HISSAR ...	1	Hissár *Railway Station* ...	226	5 3 4	53,163	27,968	45,591	...	2,971	48,562	9,632
		2	Hánsi R. S.		5 3 4		By transfer 30,000					
		3	Bhiwáni R. S.		5 3 4		57,968					
		4	Fatehabad		5 3 4							
		5	Sirsa R. S.		6 4 0							
		6	Budhláda		4 11 0							
	ROHTAK ...	7	Rohtak	2,477	3 4 0	47,157	26,905	35,508	...	1,140	36,648	4,734
		8	Sámpla		3 8 0		By transfer 12,000					
		9	Gohána		3 0 0		38,905					
		10	Jhajjar		3 8 0							
	GURGAON ...	11	Gurgáon R. S.	—4,986	4 0 0	62,081	48,181	44,920	...	2,521	47,441	—4,246
		12	Rewári R. S.									
		13	Palwal									
		14	Núh									
		15	Firozpur									
	DELHI ...	16	Delhi R. S.	17,954	4 4 0	4,300	41,041	35,925	3,000	216	39,141	19,853
		17	Sonepat		4 0 0							
		18	Ballabgarh		4 8 0							
	KARNAL ...	19	Karnál R. S.	59,910	4 4 0	60,812	59,352	49,284	5,340	1,514	56,138	33,124
		20	Pánipat R. S.		4 4 0					By transfer 30,000		
		21	Kaithal R. S.		4 11 0						86,138	
		22	Gulah Sub-Tahsil		...							
		23	Thánesar and Pahowa Iláqa ...		5 6 8							
		24	Indri		5 7 6							
	UMBALLA ...	25	Umballa R. S.	21,018	4 11 0	60,498	55,271	50,756	1,000	3,793	55,549	20,740
		26	Kharar									
		27	Rúpar									
		28	Naráingarh									
		29	Jagádhri R. S.									
	SIMLA ...	30	Simla and Bharauli	175	6 4 0	992	995	948	...	70	1,018	152
		31	Kotkhái and Kotgarh		5 0 0							

JULLUNDUR	KANGRA	32	Kángra											
		33	Pálampur											
		34	Núrpur											
		35	Dera											
		36	Hamírpur	40,923	5 3 4 to 3 2 0	48,090	55,873	41,976	5,676	5,490	53,142	43,654
		37	Kulu		5 3 4							
		38	Plách		5 3 4							
	HOSHIARPUR	39	Hoshiárpur									
		40	Dasúya	31,030	4 2 8 to 4 4 0	59,866	60,234	56,855	2,000	3,600	62,455	28,809
		41	Garhshankar									
		42	Una		4 4 0							
	JULLUNDUR	43	Jullundur R. S.									
		44	Nakodar									
		45	Phillour R. S.	20,737	3 11 2	55,022	56,800	54,394	1,000	1,880	57,274	20,263
		46	Nawashahr									
	LUDHIANA	47	Ludhiána R. S.		3 2 0							
		48	Samrála	*22,965	3 2 0	37,782	37,782	36,863	...	3,713	40,576	20,171
		49	Jagráon		...							
	FEROZEPORE	50	Ferozepore R. S.									
		51	Moga									
		52	Zíra	12,603	4 11 0	66,517	63,908	53,416	...	2,636	56,052	20,459
		53	Mukhtsar R. S.									
		54	Fázilka R. S.		6 7 4							
LAHORE	MONTGOMERY	55	Montgomery R. S.									
		56	Gugera									
		57	Dipálpur	16,211	6 4 0	28,001	27,134	27,402	...	3,539	30,941	12,404
		58	Pákpattan									
	LAHORE	59	Lahore R. S.									
		60	Chúnián									
		61	Sharakpur	23,009	5 0 0	50,943	50,999	44,939	2,000	2,841	49,780	23,528
		62	Kasúr R. S.									
	AMRITSAR	63	Amritsar R. S.									
		64	Tarn Táran	95,611	4 11 0	59,343	59,086	46,123	20,000	3,982	70,105	84,592
		65	Ajnála									
	GURDASPUR	66	Gurdáspur R. S.									
		67	Batála R. S.									
		68	Shakargarh	25,886	4 11 0	74,263	72,767	64,918	4,000	3,614	72,532	26,121
		69	Pathánkot R. S.									
	SIALKOT	70	Siálkot R. S.									
		71	Daska									
		72	Pasrúr	81,429	5 3 4	84,677	74,963	59,265	12,500	3,744	75,509	43,883
		73	Raya							By transfer	37,000	
		74	Zafarwál								1,12,509	
	GUJRANWALA	75	Gujránwála R. S.									
		76	Wazírabad R. S.	62,713	5 3 4	67,606	50,151	35,751	5,000	4,774	45,525	67,339
		77	Háfizabad R. S.									

* The amount in column 2 is less than that of last year by Rs. 3 which is included in column 4, see Accountant-General's No. 3409 C. D., dated 26th September 1902.

STATEMENT SHOWING ANNUAL ABSTRACT OF INCOME AND EXPENDITURE OF THE PATWARI FUND OF THE PUNJAB FOR THE YEAR 1903—*concluded*.

Division.	District.	No. of Tahsil.	Name of Tahsil.	Balance in hand at beginning of year.	Rate of Patwári Cess (give detail for each Tahsil).	Demand.	Total Receipts.	Expenditure on salaries of Patwáris.	Contribution to Kánúngo Establishment.	Other Charges.	Total Expenditure.	Closing Balance.
				Rs.	Rs. a. p.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
RAWALPINDI.	GUJRAT ...	78	Gujrát R. S.	6,765	4 11 0	42,095	40,259	34,855	...	2,302	37,157	9,867
		79	Khárián R. S.									
		80	Phália									
	SHAHPUR ...	81	Shahpur	—5,386	4 0 0	22,171	19,193	23,543	...	2,187	25,730	8,077
		82	Bhera R. S.			By transfer	20,000					
		83	Khushâb R. S.				39,193					
	JHELUM ...	84	Jhelum R. S.	14,669	6 4 0	57,244	62,561	36,539	5,000	2,275	43,814	33,416
		85	Pind Dádan Khan R. S. ...									
		86	Chakwál									
		87	Talagang									
	RAWALPINDI ...	88	Ráwalpindi R. S.	16,607	5 0 0	52,860	48,290	48,437	...	8,613	57,050	12,847
		89	Attock R. S.		6 4 0		By transfer 5,000					
		90	Kahúta		6 4 0		53,290					
		91	Murree		6 4 0							
		92	Pindigheb		6 4 0							
		93	Gujar Khan R. S.		4 11 0							
		94	Fatehjang R. S.		5 0 0							
	MIANWALI ...	95	Miánwáli	13,398	5 0 0	43,414	43,158	35,201	...	3,314	38,515	13,041
		96	Isa Khel		5 0 0							
		97	Leiah		6 4 0							
					6 4 0							
		98	Bhakkar R. S.		6 4 0							

MOOLTAN ...	JHANG ...	99	Jhang	14,633	5 0 0	21,555	21,403	21,936	2,600	7,775	32,311	3,725
		100	Chiniot									
		101	Shorkot									
		102	Samundri									
		103	Lyallpur R. S.									
		104	Toba Tek Singh R. S.									
	MOOLTAN ...	105	Mooltan R. S.	69,544	6 4 0	52,387	51,743	49,545	20,000	4,384	73,929	47,358
		106	Shujabád R. S.									
		107	Lodhrán R. S.									
		108	Mailsi									
		109	Kabírwála									
	MUZAFFARGARH	110	Muzaffargarh	25,943	6 4 0	44,401	44,294	29,930	2,000	7,756	39,686	30,551
		111	Alipur									
		112	Sináwán									
	D. G. KHAN ...	113	Dera Gházi Khan	26,386	3 2 0 and 3 2 0 2 8 0 3 2 0	34,654	34,654	25,884	2,000	1,473	29,357	31,633
		114	Sanghar									
		115	Jámpur									
		116	Rájanpur									
	GRAND TOTAL ..			7,12,450	...	12,91,894	13,01,264	11,15,433	98,387	1,29,117	13,42,937	6,70,777

REPORT

OF THE

OPERATIONS OF THE DEPARTMENT

OF

LAND RECORDS AND AGRICULTURE,

PUNJAB,

For the year ending 30th September 1904.

Published by Authority.

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

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1904.

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No. 28.

FROM

A. H. DIACK, ESQUIRE,

Chief Secretary to Government,

Punjab and its Dependencies,

To

THE SENIOR SECRETARY TO THE FINANCIAL COMMISSIONER, PUNJAB.

Dated Lahore, 21st February 1905.

File No.

Revenue and Agriculture.

Agriculture.

SIR,

I AM directed to acknowledge the receipt of your letter No. 94, dated 28th January 1905, with which was forwarded a copy of the Report on the operations of the Department of Land Records and Agriculture for the year ending September 30th, 1904.

2. The marked increase which has occurred since 1900 in the proportion of the total number of Patwaris who have satisfied an educational test such as the Middle School or Entrance Examination is highly satisfactory. From Mr. Renouf's remarks it is clear that a sufficient number of candidates who have fulfilled such a test are forthcoming to fill all vacancies, and that the number of accepted candidates may well be reduced so as to include only those so qualified. The Lieutenant-Governor is content to accept Colonel Montgomery's decision in regard to the reservation of posts of *siah navis* and *wasil baqi navis* for Patwaris, that a strict interpretation of paragraph 7 of Revised Revenue Circular No. 29 should sufficiently provide for fair chances of selection being offered to this class of candidate.

3. His Honour has read the report with interest, and concurs in the Financial Commissioner's remarks upon it and in his appreciation of the work done by Mr. Renouf during the year.

I have, &c.,

A. H. DIACK,

Chief Secretary to Government, Punjab.

Punjab Government Press, Lahore—21-2-05—451—C.L.

No. 94, dated Lahore, 28th January 1905.

From—L. H. LESLIE-JONES, Esquire, Senior Secretary to the Financial Commissioner, Punjab,
To—The Chief Secretary to Government, Punjab.

I AM directed to forward a copy of letter No. 3980, dated 19th December 1904, from the Director of Land Records, Punjab, enclosing his Annual Departmental Report* for the year ending 30th September 1904, and to convey the following remarks.

* Spare copies will follow.

2. The increase of the pay of Patwaris in the Hoshiarpur and Simla Districts was sanctioned by Colonel Montgomery. In the latter district there are only 8 Patwaris. The question of raising their pay in the other districts mentioned by Mr. Renouf in paragraph 8 of the Report has only just come under the consideration of the Financial Commissioner who thinks that such increase is in itself most desirable, but he is unable to make any definite recommendations until he has had an opportunity of examining the scheme more thoroughly with reference to the present position of the Provincial Patwar Fund.

3. The Financial Commissioner called for the opinions of Revenue Officers with regard to the suggestion made in paragraph 2 of the Government review on last year's report, that the appointments of Siah Nawis and Wasil Baqi Nawis should, except in special cases, be reserved for Patwaris only; but on receipt of the replies Colonel Montgomery decided that it would be inexpedient to go beyond the instructions contained in paragraph 7 of Revised Revenue Circular No. 29.

4. The selection of 25 non-Patwaris who have not passed the Entrance Examination as Kanungo candidates which is referred to in paragraph 12 of the report is in direct contravention of the rules, and the Director of Land Records should report the result of his inquiries. His interpretation of Revenue Rule 104 (*iii*) is perfectly correct, and Deputy Commissioners should vigorously check any tendency to disobey it. The Financial Commissioner is disposed to think that the unqualified candidates admitted should be struck off the list; but he will await the report called for before giving this order.

5. The Director of Land Records has included the accounts of the Jhelum Colony Patwar Fund in his Provincial Abstract of Income and Expenditure. The incorporation of the Jhelum Colony Fund in the Provincial account has not yet been sanctioned authoritatively, but the Financial Commissioner sees no objection to such a course.

6. The sum due to the Irrigation Department from the Chenab Colony has not been stated, but it represents one-eighth of the annual demand from the Colony Patwar cess, or about Rs. 21,654, so that if this sum is added to the contribution of Rs. 1,51,237 for Field Kanungo Establishment not yet debited to the fund (*vide* Report, paragraph 13), there will be a deficit on the annual account of Rs. 11,187, although there is, it is true, a large balance at the credit of the fund.

7. The destruction by fire of the record room at Dharmsala has already been reported to Government, as also the measures which have been taken to restore the records. Much of the work involved is, as Mr. Renouf remarks, of a very delicate character, and Sir Lewis Tupper thinks that it is being well done. A question has recently arisen as to whether it may not be necessary to remeasure some of the Nurpur estates before settlement, but it is not yet possible for the Financial Commissioner to give a definite opinion on this point.

8. It is satisfactory to note from paragraph 20 of the Report that in spite of the high mortality caused by plague, the mutation work of the Province is well up to date. The Financial Commissioner has under consideration a suggestion of Mr. Renouf that more definite instructions should issue as to the cases in which

Revenue Officers should determine disputes in mutation inquiries as permitted by Section 36 (1) of Act XVII of 1887 ; and he is glad to observe that his circular letter No. 2 of 1903, regarding the treatment of the rights of absentees, is receiving attention in most districts. The state of the pending partition files (paragraph 21) should receive the careful attention of District Officers ; and it is important that the duty of recording observations in the abstract village note books (paragraph 26) should not be neglected.

9 In his paragraphs 31 to 41 Mr. Renouf has given an interesting history of the cultivation of cotton in the Punjab. Sir Lewis Tupper has himself seen what is being done in the Lyallpur Farm, and he thinks that the plan of hand ginning selected seed and of inviting the co-operation of all mill owners in the Punjab gives the best prospect of success in our endeavours to improve the quality of the staple.

10. The agricultural shows (*vide* paragraph 47) which are now to be held annually in Ferozepore and Lyallpur undoubtedly serve a useful purpose and it may prove desirable to extend the system to other districts.

11. Mr. Renouf (paragraph 55) has attached a copy of Captain Crosthwaite's remarks on the Co-operative Societies in the Bhakkar and Leiah Tahsils of Mianwali. A Registrar of Co-operative Socities has recently been appointed to push the development of agricultural banks, and the districts of Mianwali, Rawalpindi, Hoshiarpur, Montgomery and Karnal have been selected as those which should receive his primary attention. It is as yet too early to hazard an opinion as to the immediate results of his operations.

12. Mr. Renouf's report is, Sir Lewis Tupper thinks, an interesting and valuable record of meritorious work. He has obtained a good grasp of his various subjects, and his zealous endeavours to improve the main staples of produce in the Province are specially worthy of the recognition of Government.

Punjab Government Press, Lahore—21 2 05—451—C. L.

No. 3980.

FROM

W. RENOUF, ESQUIRE, C.S.,
Director of Land Records and Agriculture, Punjab,

To

THE SENIOR SECRETARY
TO THE FINANCIAL COMMISSIONER,
PUNJAB.

SIR,

I HAVE the honour to submit the Annual Report of this Department for the year ending 30th September 1904.

I have the honour to be,
Sir,
Your most obedient servant,
W. RENOUF,
Director of Land Records and Agriculture, Punjab.

LAHORE :
19th December 1904.

ANNUAL REPORT

OF THE

DEPARTMENT

OF

LAND RECORDS AND AGRICULTURE, PUNJAB,

FOR THE YEAR ENDING THE 30TH OF SEPTEMBER 1904.

Chapter I.—Prefatory.

Personal.

1. I held charge of the Department throughout the year. Chaudhri Sultán Ahmad, Extra Assistant Commissioner, was Personal Assistant up to the 25th of July when, on his appointment as Assistant to the Colonisation Officer, Sargodha, he was succeeded by Sheikh Fazal Karím, Extra Assistant Commissioner, Revenue Assistant of Ferozepore. Sheikh Fazal Karím is taking pains to learn his new duties, but it will naturally be some time before he can make himself thoroughly conversant with them. Chaudhri Sultán Ahmad again worked satisfactorily.

Tour.

2. I was on tour for 139 days in the districts of Delhi, Gurgáon, Rohtak, Gujránwála, Amritsar, Jhelum, Shahpur, Gujrát, Ráwalpindi, Hoshiárpur, Montgomery and Attock, and the Chenáb and Jhelum Colonies, inspecting 24 tahsil and district offices. I attended agricultural shows at Ferozepore and Lyallpur and cattle fairs at Lyallpur and Choa Saidan Shah. The work of patwáris, field kánúngos and district kánúngos was also examined in various districts. The time available for tahsil inspections was curtailed from various causes:—a visit to the Bombay Presidency in the first half of November; a fortnight's tour in March in the Hoshiárpur, Amritsar, and Montgomery districts and the Lyallpur Colony with the Inspector-General of Agriculture, and the abandonment of my monsoon tour on account of my being placed in additional charge of the duties of the Director of Public Instruction for three months during the summer. I anticipate that the demands of the Agricultural and Veterinary Departments will continue to increase. The Lyallpur Farm, for instance, is in constant need of personal attention. My Personal Assistant was in camp for 149 days inspecting six head-quarters and a number of tahsil offices. He also checked the autumn and spring *girdáwaris* in several districts. An endeavour was made to do some inspection work in each district of the Province.

Enquiry into the sufficiency of tahsil establishments.

3. It has been decided that reports on the sufficiency of tahsil establishments should, for the sake of convenience, be prepared by complete districts. The first instalment of 9 districts was submitted to the Financial Commissioner after circulation to the Deputy Commissioners and Commissioners concerned for opinion.

Examination of Náib-Tahsíldárs.

4. Owing to the demand for qualified Náib-Tahsíldárs for settlement work it was again found necessary to hold two examinations, in January and August, at which 160 candidates presented themselves.

New statements added to this Report.

5. Two new statements have been added to the Report: Statement No. II exhibits the educational qualifications of Patwáris and Patwári candidates and the punishment and promotion of Patwáris; Statement No. III shows the working of the Land Record Agency.

Chapter II.—Land Record Establishments.

(See Statement II.)

Patwári candidates.—Statement II.

6. As many as 1,050 candidates were admitted to the register during the year, compared with 928 in 1902-03. The total number of candidates has increased from 3,518 to 3,548, representing 42 per cent. of the total number of Patwáris. District figures exceed 50 per cent. in Rohtak, Karnál, Simla, Gujránwála, Gujrát, Shahpur, Ráwalpindi, Attock, Miánwáli, Jhang, Multán and the Chenab Colony. Except in the cases of Simla, Gujrát and Multán, current or impending Settlement operations or colonisation may be accepted as a partial explanation. It is to be regretted that greater efforts are not made to keep the number of candidates within reasonable limits. Actual calculation has shown that the percentage required for the Province as a whole is 26, if a candidate is to obtain employment within four or five years. The above percentage need only be exceeded in districts under Settlement, or in special circumstances. It is undesirable to enlist men who are not likely to be employed for six or more years. Attention appears to have been given to this in some districts, and particularly in the Jullundur and Lahore Divisions. Sixty-eight per cent. of the candidates have passed the Middle or Entrance Examination. At a rough estimate, if the one-third who have not passed the Middle Examination were removed, the remainder would suffice for all requirements. An appreciable number of the men with inferior qualifications are reported to be relations of Patwáris and Kánúngos. The Middle Standard is ordinarily the minimum which should be accepted, and I think that relaxations should be confined to a limited number of agriculturists. It is satisfactory to note that the claims of agriculturists are borne in mind, almost half the recruits being of this class. With reference to the directions that no particular class should be allowed to absorb too many appointments, the Settlement Officer of Gurgáon states that he found that almost all the candidates in that district had been taken from three families. This exemplifies the urgency of maintaining an active control over recruitment.

Patwári schools.

7. Patwári schools were opened in the districts of Rohtak, Karnál, Gurgáon, Gurdáspur, Gujránwála, Dera Ismail Khán and Jhang. There were no regular schools in the districts of Ráwalpindi and Attock, but an examination of candidates who had received a practical training was held by the Settlement Officer. There is no essential difference between this and the ordinary system of instruction, the main features of which are or should be practical work. The Rohtak report demonstrates the unsuitability of men who have only passed the Primary Examination. Out of 33 failures, 27 were of this class, their special weakness being in arithmetic and mensuration.

Patwáris' pay.

8. On a representation being made from Hoshiárpur that the Patwáris in that district were being paid at the comparatively low rates of Rs. 11, Rs. 10 and Rs. 9, the Financial Commissioner sanctioned an increase to Rs. 13, Rs. 11, and Rs. 10. The two highest grades are still below the standard rates of Rs. 14 and Rs. 12. It transpired in the course of enquiries that the Patwáris of the Kángra, Jullundur, Ludhiána and Simla Districts were in need of a similar concession. It was accordingly decided to give equal treatment to all these districts and to defer a complete levelling up until the receipts of the Patwár Fund balance the expenditure. The Deputy Commissioners of these districts were asked to send up their cases, and Simla has already been disposed of.

Efficiency of Patwáris.

9. Thirty-five per cent. of the Patwáris and Assistant Patwáris have passed the Middle and Entrance Examination. The last occasion on which this information was collected was in 1900, when the percentage was twenty-five. The efficiency of the staff continues to increase with better educational qualifications and training and closer supervision. Complaints are mostly directed against men of the old school. Returns have been submitted with punctuality.

Conduct of patwáris.

10. Out of the 105 dismissals, only a few were for actual tampering with records or false reports. Offences of this nature are difficult to prove and convictions are rare. Gurgáon accounts for 24 dismissals, mostly for incompetence. The Patwáris of that

district are described as "probably the worst in the Province—old, corrupt, lazy and inefficient." Fines, suspensions and reductions were numerous, particularly in districts under Settlement. The majority of these represent petty shortcomings which were met by trifling fines. With reference to the 333 cases of punishment in the Chenáb Colony it is explained that, "in addition to measurements and re-measurements, the temptations open in the colony are numerous and lucrative, and a high standard of duty has to be exacted." There were 33 criminal prosecutions in the Siálkot District in 1903, and 42 criminal complaints were lodged this year, out of which 25 were dismissed summarily. The only conviction was under Section 174 of the Indian Penal Code for failure to attend in obedience to the order of the Tahsíldár. The offences, which range over 18 sections of the Penal Code, are almost all unconnected with a Patwári's duties. They would seem to indicate that the Patwáris have succeeded in making enemies, a circumstance for which they possibly have themselves to blame. The integrity of Patwáris as a body has improved and would probably be higher if they had more to lose by dismissal. It would also be necessary to increase the chance of detection. Supervision is close and strict when a Settlement is in progress, but, at other times, it is much less rigid and is occasionally insufficient. Vigilance is particularly essential in tracts under fluctuating assessment.

Rewards.

11. Rewards were only given in districts under Settlement, where they were granted freely. Gratuities on retirement were sanctioned for 84 Patwáris, to the amount of Rs. 10,365. Before the provincialisation of the Patwár Fund, the award of a gratuity was conditional on the existence of a closing balance of more than one-eighth of the previous year's expenditure, and on the total amount granted not exceeding 3 per cent. of the Patwár Fund income. These restrictions have now been removed. They often operated very harshly in the case of deserving men. They also hampered district officers who were reluctant to dismiss old servants without reward or pension. The expenditure under this head has risen by Rs. 3,445 during the year.

Promotion obtained by Patwáris.

12. There were 83 Kánúngo vacancies during the year, 66 of which were given to Patwáris. This is well above the two-thirds proportion. The number of Kánúngo candidates accepted during the year was 98 out of a total of 209, or a little below the prescribed minimum of one-half. Twenty-five non-Patwáris have been admitted to the register, although they have not passed the Entrance Examination. Eleven of these were at Miánwáli. The districts concerned will be asked to explain the circumstances under which these men were accepted, as, under the Revenue Rules, all candidates must be either Patwáris or men who have passed the Entrance Standard. It is reported from Ambála that there is a tendency for "Entrance" men to take service as Patwáris with a view to securing early nominations to the candidateships and vacancies set aside for Patwáris. It would be possible to fill all Kanúngo vacancies with Entrance men of this class who have only served three or four years, without contravening the letter of the rule, although this would obviously be contrary to its intention which is to reserve appointments for able Patwáris of the ordinary type. The fact that a Patwári has passed the Entrance Examination should not be a bar to his promotion, but it is necessary to guard against the spread of the abuse which has been brought to notice. In addition to Kánúngoships, Patwáris secured 48 miscellaneous appointments, such as Siah Nawís, Wasil Báqi Nawís and Tahsíl Judicial Moharrir, Patwáris and Kánúngo candidates having been declared eligible for the last named posts. The total number of promotions is small for an establishment of over 8,000 men. The conditions of service for those who fail to obtain promotion require improvement, and I hope that this will be considered when the Patwár Fund has an annual surplus. What seems most wanted is to add to the incentives to good behaviour by giving the Patwári more to lose in case of dismissal.

The Patwár Fund. (See Statement IV.)

13. The income of the Patwár Fund amounted to Rs. 15,97,891 against an expenditure of Rs. 14,36,187. Receipts were higher than in previous years on account of realisations of suspended revenue and the inclusion of the Chenáb and Jhelum Colonies. The contribution of about Rs. 1,51,237 for the field Kánúngo establishment has not been debited up to the present owing to the difficulty experienced in ascertaining some of the items. A large sum is also due to the Irrigation Department from

the Chenáb Colony for the pay of Canal Patwáris. Rs. 45,174 were transferred between districts to maintain working balances. Tahsíl and district accounts were carefully audited in the course of inspection tours. The new scheme under which expenditure will be against budget grants will have effect from the 1st of April next. Detailed account rules, adhering as closely as possible to the old system, have been prepared and issued. The statement of accounts attached to this Report will also be amended in due course. The Patwár Fund has been included in the peripatetic system of audit which has just been started for the local funds of the Province. The statements prescribed in Part F of Revenue Circular No. 35 for the control of Patwár cess collections have been re-cast and improved.

Kánúngo Candidates.

14. There is a slight decrease of 10 in the number of Kánúngo candidates, the total being 691. The majority belong to the Patwári class. The number of candidates in the Province is very high if we consider that there is an average of one vacancy per district per year. There are in all only 555 posts of Field, Office and District Kánúngo on district establishments. The two colonies and a number of settlements, however, provide work at present for a very large number of men, and many find their revenue training helpful in obtaining posts in other Departments. Two hundred and nine new candidates were admitted during the year. An abnormal number of non-Patwári candidates were admitted in Miánwáli because suitable Patwáris could not be found and, in Jhang, because so many of the Entrance-passed men find employment elsewhere after receiving their training and drop out of the list. The general opinion is that the Entrance-passed man takes a long time to learn his work and compares unfavourably with the Patwári at the outset.

Kánúngo Examinations.

15. Examinations were held during the year at Ráwalpindi, Shahpur, Dera Ismail Khan, Gujránwála, Multán, Delhi, Lyallpur, Abbottabad and Bhakkar for candidates belonging to the Punjab and North-West Frontier Province. Three hundred and eighty-seven candidates appeared; 247 completed the examination and 43 were partly successful. Certificates of efficiency were granted to 175 men. There are only two Kánúngos in the Province who do not possess this certificate.

Efficiency and conduct of Kánúngos.

16. With few exceptions, the Kánúngos are sufficiently capable men. Their conduct is good. Their efficiency must naturally depend on the supervision of their superior officers. The Revenue Assistant and the tahsíl officers see a considerable amount of their work, but a great deal turns on the personality of the District Kánúngo. This official's special task is to test at least once a year the work that each Field Kánúngo has tested, passing not less than three days in his circle. The District Kánúngo is the only officer who has time for such a minute examination of the quality of the work. If he does his duty, it is difficult for an idle or dishonest Field Kánúngo to escape exposure. As contemplated by the Land Revenue Rules it is essential that the District Kánúngo should be a man "of distinct superiority in ability, education, experience and physical activity." It is to be regretted that it is often difficult to retain a really good man in this post, as he so speedily receives further promotion to a Náib-Tahsíldárship. In many cases, in default of any one better, a man of very average attainment has to be accepted. If he is of spent energy, and with no prospect of advancement, he is of little value as a driving power.

Promotion of Kánúngos to higher posts.

17. The list of promotions of Kánúngos is satisfactory. The District Kánúngo of Amritsar who was officiating as a Tahsíldár, has been made sub. *pro tem.* The same official in the Ferozepore District has been given an officiating appointment as Tahsíldár, whilst the District Kánúngos of Ambála, Gurdáspur and Jhelum have become officiating Náib-Tahsíldárs. The District Kánúngo of Gujránwála has been promoted to the post of Sheriff. One Kánúngo from each of the five Districts of Karnál, Amritsar, Muzaffargarh, Lahore and Gujránwála has been confirmed as a Náib-Tahsíldár, whilst two men from Amritsar and one from Muzaffargarh have been appointed officiating Náib-Tahsíldárs. Kánúngos were accepted as candidates for the post of Náib-Tahsíldár from Gurgáon, Jullundur, Dera Gházi Khan and Miánwáli, and the Jhelum and Chenáb Colonies, A Field Kánúngo of the Ráwalpindi District has been made District Wásil Báqi Nawís at Attock. A Field Kánúngo of the Lahore District was given the post of Assistant Wásil Báqi Nawís in his own district, and one man was appointed Reader to the Colonisation Officer, Jhelum Canal.

Chapter III.—Utilization of Land Records.

(See Statement III).

Record of rights.

18. White ants did some damage at Ferozepore, and are a source of danger at Muzaffargarh where the record-room is reported defective as regards light and air. Old records are being re-bound in the Gujrát District. The arrangements for the preservation of Revenue records are generally excellent. The volumes and papers are in good condition. The separation of Revenue records has been completed at Delhi and is being carried out at Jullundur.

Destruction of the Kángra records by fire.

19. A disastrous fire took place in Kángra in February when the record-room at Dharmsála, with almost all that it contained, was burnt to the ground. Duplicates of the Patwáris', copies of the maps and records are being made with all possible despatch. Three-quarters of the Patwáris were collected at the tahsils for this purpose during the summer months, the preparation of detailed *jamabandís* being necessarily abandoned for the current year. A large staff of extra copyists has been collected in the fort at Kángra where the bulk of the work is being done. The map copying is an exceptionally difficult and delicate matter, owing to the dilapidated state of the Patwáris' maps, but it is being done remarkably well. The work was inspected by me in October, and will be again inspected early next year.

Mutations.

20. There were 678,423 mutations for disposal, 600,998 were attested, leaving a balance of 77,435. The heaviest work was in Gurgaon, Ráwalpindi, Hoshiárpur, and Jullundur. Balances are nowhere excessive. The file has been cleared almost entirely of cases pending over two years. Plague is responsible for the high figures in several districts. Twelve Extra Naib Tahsildars for mutation work were posted for varying periods to the Hissár, Rohtak, Karnál, Hoshiárpur, Amritsar, Lahore, Gurdáspur, Gujránwála, Gujrát and Jhelum Districts. The standard of work was, on the whole, very creditable. The principal defects are that the form of the order is not uniformly in accordance with the directions in Revenue Rule 284 (*i*) and that the discretion to refuse to enquire into disputes is too frequently exercised. Many disputes might be settled satisfactorily and finally with slight expenditure of time and trouble, thereby preventing recourse to a civil court. The weakest part of our mutation work is that done by Extra Naib Tahsildars. Partly from inexperience and partly from a desire to show a large outturn of work, many of them write orders which are much too brief, and disregard the commonest directions. The remedy is to inspect their first cases and to explain to them that they will be judged mainly by the quality of their work. Being probationers, they should be anxious to do well and earn commendation. Special attention has been directed to the working of the Alienation of Land Act. Its provisions were very imperfectly grasped by Tahsildars and Naib Tahsildars for the first two years after it came into force, so that mistakes were numerous. During the year 1903-04, old mutation cases relating to transfers have been scrutinised, and wrong orders reviewed. The Revenue staff have been carefully drilled and there is a great improvement in their knowledge of the provisions of the Act. Financial Commissioner's Circular No. 2 of 1903 regarding the treatment of the rights of absentees in mutation proceedings is receiving attention in most districts. The matter requires very careful handling to safeguard the rights of those absentees who have not abandoned their interests. More general notice is now taken of rights in *shámilát* in mutations of permanent and temporary transfers of land. The above points were brought to the notice of district officers in my General Letter No. 2134 of the 11th July 1904. It is a matter of common experience that the permanent tahsil staff relax their efforts whenever an Extra Naib Tahsildar is sent to a tahsil for mutation work. Remonstrances are quite unavailing. In this connection a useful suggestion is made by the Commissioner of Lahore to the effect that care should be taken to prevent officers from working over the same ground.

Partition cases.

21. The partition cases decided during the year amounted to 6,468, involving an area of 612,573 acres. The pending file has gone up from 2,629 to 3,748 cases. Partitions are very liable to delay whenever they present any difficulty, and constant vigilance is

required. Large balances in Jhang are due to disputes as to title, and, in Kángra, to the staff having been engaged in copying records.

Annual records.

22. Detailed *jamabandís* were prepared in 8,469 villages and almost all were filed by due date. In the Karnál District, detailed *jamabandís* were prepared for the entire number of estates in view of the coming Settlement, whilst they were not prepared at all this year in the Ráwalpindi and Miánwáli Settlements. In the Kángra District they were only prepared in the Kulu Tahsil, for reasons explained in paragraph 19 above. They were omitted in some riverain villages of the Montgomery District pending the decision of Government as to some village boundaries fixed under the Riverain Boundary Act. Only measurement *jamabandís* were prepared in Jhang. Sanction was given by the Financial Commissioner to the discontinuance of abbreviated *jamabandís* in Gurdáspur, the special records prescribed for the district being sufficient for the purposes of the fluctuating assessment. A large number of detailed *jamabandís* were checked by the Collector and his Assistants, the only exceptions being in the districts of Delhi, Lahore, Shahpur and Multán. In the course of last winter's inspections it was found that the check by field Kánúngos was not always in accordance with the directions in paragraphs 69, 70 and 71 of revised Revenue Circular 28. The reason alleged was that the Circular had not been generally issued to Kánúngos and Patwáris. A special extract was accordingly prepared and sent to districts for distribution.

Director of Land Records' Circular No. 2 of 1904.

23. A slight change has been made in the procedure in mutation cases where it is a condition of the transfer that possession is to be given at some future date. If the alienor is prepared to give, and the alienee to receive, possession on the prescribed date, attestation is to be postponed until that time, and mutation then allowed on evidence that possession has been obtained. Under the old rule mutation was refused, the parties and the Patwáris being put to unnecessary trouble in getting a fresh mutation written up when possession had passed.

Abolition of the register of di-alluvion villages.

24. The register of di-alluvion villages maintained by District and Office Kánúngos has been abolished as it served no useful purpose.

Amendment of Revenue Business Return No. IV.

25. Revenue Business Return No. IV, the quarterly statement of the maintenance of village records, has been recast and reduced to much smaller dimensions.

Abstract note-books.

26. Abstract note-books are up to date as regards statistics. Observations have been recorded in them by the Deputy Commissioners of Hissár, Rohtak, Delhi, Karnál, Ludhiána, Siálkot and Gujránwála, as well as by the Settlement Officers of Ráwalpindi and Háfizabad, and in some other districts by Revenue Assistants. The Deputy Commissioners of Lahore and Jhelum derived assistance from them in connection with suspensions and remissions of land revenue.

Survey marks.

27. Survey marks and trijunction pillars are reported to be in good condition, except in Siálkot, Lahore, Miánwáli, Shahpur and Muzaffargarh. Repairs have been taken in hand. It is proposed in some districts to replace brick by stone pillars in riverside villages.

Chapter IV.—Scientific enquiry under Provincial or Imperial Direction.

The Agricultural Department.

28. Satisfactory progress has been made during the year with the development of the Agricultural Department. The Secretary of State having sanctioned the appointment of a Deputy Director of Agriculture for the Province, there only remains to make a selection for the post. An Economic Botanist is to be placed at Saháranpur for the United Provinces and the Punjab. Although the climate of Saháranpur is so different from that of most of the Punjab that any results obtained there will not be generally applicable, still if the Economic Botanist at Saháranpur is permitted to visit the Lyallpur Farm and to make himself acquainted with the characteristics of Punjab agriculture, we shall profit greatly from his advice and experience. I

hope that we shall eventually secure a whole-time officer. The Manager of the Lyallpur Farm spent five weeks on tour in Bombay and Sind where, by the kindness of the Bombay Agricultural Department, he visited the various Government farms and experimental stations. He submitted an account of his journey, which showed that he had made good use of his opportunities. Lála Vishwa Náth Sahai, Agricultural Assistant, having completed his training under Mr. Maxwell Lefroy, the Entomologist to the Government of India, and received a very good report from him, has commenced work in the Province. A third square has been added to the Lyallpur Farm. The full six squares reserved for the Farm will be taken up next year. The original two squares are only sufficient for experiments but, with six squares, we shall be able to grow seed for distribution.

Establishment of a seed farm at Sargodha.

29. Proposals put forward by Mr. Hailey, the Colonisation Officer, Jhelum Colony, for the establishment of a seed farm of 20 squares at Sargodha have been approved by the Local Government. His intention is to introduce good indigenous varieties of wheat and cotton. The seed farm will include the 8 squares reserved for an experimental farm, but this area or any part of it will be available if required for a research station. The colonists are in special need of assistance in the matter of seed as they come, for the most part, from districts the husbandry of which is in a backward condition. The farm is to be under the general supervision of this Department.

Entomological research.

30. The Agricultural Assistant detailed for entomological research is working in immediate correspondence with Mr. Lefroy to whom his specimens and monthly reports are forwarded. He is studying insect pests in the vicinity of Lahore where he can observe most of those which are to be met with in the Punjab. I have asked district officers to report the presence of any pest causing widespread damage with a view to the institution of a local enquiry. As suggested by Mr. Lefroy, I think it will be important for Lála Vishwa Náth Sahai to see him once annually for a fortnight. He will identify his collections, learn the progress made during the year, and receive further training in special branches in which he has found difficulty. This part of the work is naturally in its initial stages. Some useful information has already been collected. In some cases, remedial measures by means of spraying have been attempted but with no marked results. Local investigations have been made at Dera Gházi Khan and Patiála.

Cotton. A general review of the situation.

31. In view of the wide interest which attaches to everything connected with cotton, I propose to give a brief sketch of the situation in the Punjab and to summarise what has been done in this field up to the present. By way of introduction it is sufficient to advert to the inability of America and Egypt to meet the constantly increasing demand for long-stapled cottons and to the efforts which are being made throughout the world to create new centres of production, as well as to improve the local varieties in those countries which grow inferior qualities. In the early days of the East India Company, India was famous for the fineness of its piece-goods and muslins in which there was a valuable export trade. But the rapid expansion of cotton production in America in the early part of the last century, combined with improvements in machinery for spinning and weaving, brought cheaper materials into the market. Competition from India was short-lived. A large export was in time displaced by an even larger import. It no longer paid to cultivate the high class cottons which must undoubtedly have been grown, and the present conditions were gradually established in which the cotton of the greater part of India is absolutely of the lowest grade in the market. Sown broadcast, it receives comparatively little attention. The fibre has the defects of being extremely short and coarse. On the other hand, it has the qualities of strength and whiteness. The highest counts which can ordinarily be spun from it are 14's and 16's. In India, it is manufactured into coarse country cloth, durries, tents, ropes and so forth. In spite of its inferiority, however, there is a brisk and expanding demand for it on the Continent and in Japan, where it is blended to some extent with finer cottons. Mixed with wool, it is also largely employed in making blankets, flannelettes, under garments and carpets. A few exceptions should be noted to the general inferiority of Indian cotton. A somewhat better staple which is grown with great care, is produced in Gujerát, Broach, Hinganghât, and other

tracts. But in some of these areas also the cultivators are showing a preference for the cheaper but hardier and more prolific varieties.

Cotton cultivation in the Punjab.

32. Punjab cotton is of the low grade known commercially as Bengals. In this connection, the Province divides itself into two well-defined tracts. In the Delhi Division the greater part of the cotton area is unirrigated. The crop is sown with the arrival of the monsoon in about June or July and is about six months on the ground. In the Lahore and Multán Divisions cotton is almost entirely an irrigated crop sown in April and May and maturing in from 7 to 8 months. In the Jullundur Division, which lies between these two tracts, we find both systems in vogue. A few varieties, as for example, those grown in Hissár, Palwal, Dera Gházi Khan and Lahore, are better than the others, their superiority consisting chiefly in the higher proportion of lint to seed. Pesháwar is apparently the only district in Northern India where a fair staple is produced which can spin up to 20's. But the proportion of fibre and the yield per acre are small.

Early efforts to acclimatise exotics in the Punjab.

33. In the past, efforts have been made from time to time to introduce exotics including American, Egyptian, Nankin and Bombay varieties. But, in the total absence of experimental farms, and of an Agricultural Department, except for a Director of Agriculture, it is not surprising that failure has had to be recorded on every occasion. Apart from trials at the Agri-Horticultural Gardens, Lahore, the method adopted was the distribution of seed to cultivators, who, as a rule, took no interest in the matter. These failures, although they raise a presumption against exotics, cannot, in these circumstances, be regarded as conclusive proof that the varieties introduced were unsuitable to the Punjab soil and climate. A point which cannot be insisted on too strongly is that no exotic can be held to have had a fair trial until it has been grown with the care and attention which it is accustomed to. I doubt if any of these varieties ever received the treatment which it required, including sowing in rows or ridges at wide intervals in well prepared soils, manuring, thinning, topping weeding and frequent watering.

Expansion of cotton cultivation in recent years.

34. In consequence of the favourable prices which have obtained for some years, increased attention has been directed to cotton. The area has almost doubled in the last decade and now exceeds a million acres annually. A further impetus has been given by the establishment of ginning mills in all directions, affording facilities for marketing. But the influence of ginning mills has, in one respect, proved to be directly prejudicial. All pickings, early, middle and late, of good and bad varieties alike, are ginned together. This mixed seed being issued in large quantities to the cultivators, the result is a steady deterioration. The more intelligent cultivators select and gin their own seed cotton, but these, although they are increasing in numbers, are in a minority. Some good practical work has been done in several districts towards the selection and adoption of those indigenous varieties which are the hardiest and most prolific, and which show the highest percentage of lint to seed.

Punjab Narma.

35. The only exotics of which any traces remain in the Province are what are known as *Narma* and *Kháki*. *Narma* is the descendant of the Upland American cotton seed distributed some 20 years ago through this office. It is very rarely grown as a separate crop, but a few plants are to be found in most fields in the Central Punjab. Although the lint has deteriorated, it is still finer, softer and longer than that of the indigenous varieties, and is probably about equal to *Dharwar* cotton which is also an acclimatised American. I believe that *Narma* is occasionally to be found in small plots grown for local consumption—a garment made of it being prized for its softness. No care whatever having been bestowed on this cotton, the fact that it has survived and holds its own in the field side by side with indigenous cottons leads to the inference that the Punjab climate is not unfavourable.

Nankin or *Khaki* cotton.

36. *Kháki* or "Nankin" cotton has a history somewhat similar to *Narma*. It was imported from China in the hope that it would be of value in the manufacture of *kháki* drill. The fibre when tried was so weak that it was useless for this purpose. But

stray plants are still to be found and patches of it are sometimes grown. I have recently seen some of these in the Ambála District, and also shawls manufactured from the produce.

Methods of improvement.

37. There appear to be three recognised methods of improvement:—

(*i*) By the introduction of suitable exotics;

(*ii*) By selection from indigenous varieties;

(*iii*) By hybridisation.

The last, which may perhaps be the most promising, must at present be dismissed with the remark that an expert is required to carry the process to a conclusion. Our Agricultural staff have crossed a number of varieties, but the essential operations of choosing and fixing a type from among the mixed hybrid progeny are naturally beyond them.

Trials with American cottons in 1902 and 1903.

38. In 1902, as already reported, the Inspector-General of Agriculture tried several American cottons at Hissár where he was impressed with their healthy appearance. These included newly imported varieties and some which had been acclimatised with much care at the Cawnpore Experimental Station. These experiments were transferred to Lyallpur in 1903. In addition, in 1903, half an acre was sown with *Narma* which was collected for me by Messrs. Mela Ram, Cotton Spinners of Lahore. *Narma*, sown on May the 2nd, gave an outturn of 675 lbs. per acre, and a percentage of 33 per cent. of lint. The yield was as heavy as that of the best local varieties. *Cawnpore Acclimatised*, sown on April the 4th, gave an outturn of 679 lbs. per acre, but sown on May the 5th, fell to 345 lbs. per acre. The proportion of lint was in each case 34 per cent. *Punjab Narma* was tried in my office garden and in the Agri-Horticultural Gardens, and in both cases showed a luxuriant growth and bore well, although the plants suffered from being planted too close together and from not being topped. The outturn on $\frac{1}{4}$ of an acre in the Lahore Gardens, sown on the 4th of May, was at the rate of 508 lbs. per acre, the percentage of lint being 33. The newly imported varieties were received late and were only sown at Lyallpur on May the 15th. The outturns were insignificant, but those plants which came to maturity were healthy. If allowance be made for inexperience in treating these varieties, the results are encouraging and some useful lessons were learnt as to their cultivation.

American cottons in 1904.

39. In the Spring of this year, at the suggestion of Mr. Mollison, a more ambitious experiment was tried with exotics in the Jhelum and Chenáb Colonies. Some acres were sown in the farms at Lyallpur and Sargodha and, in addition, 5 grantees at Lyallpur and 4 at Sargodha each provided 4 or 5 acres, a guarantee being given against loss. Sowings were made in April and early May. Two two-coulter drills sowing in rows $2\frac{1}{2}$ feet apart were kindly supplied by Mr. Mollison from Gujerát, with two pairs of bullocks and two trained cultivators. The operations have been in charge of M. Ijáz Hosain, Agricultural Assistant. The varieties sown were *American Acclimatised*, including *Narma*, *Cawnpore* and *Dharwar;* newly imported *Americans*; *Egyptians*; and *Bombays*. I visited all the plots except two early in November. All the acclimatised Americans have done well. The newly imported *Americans* germinated less evenly but are promising. The *Egyptians* and *Bombays* will probably give an insignificant outturn, or none at all. At the time of my visit, the cold was already beginning to arrest their development. As pickings are still in progress, the results can only be described in general terms. It is also impossible, with an uncertain crop like cotton, to base deductions on the observations of two or three years. But we have undoubtedly good reason to persevere with the American varieties. The Cawnpore experiments have already established that they can be grown in Northern India, and the problem to be solved is, can they be grown in the Punjab as a remunerative crop? The answer was, I believe, considered to be in the negative in the United Provinces. Perhaps the drier climate of the Central and South-West Punjab may be more favourable. In any case, no difficulty is anticipated in getting some 400 or 500 acres sown next year as a speculation by those colonists who provided plots this year, or who saw the crops on the ground. These men will be brought into correspondence with the local spinners and other buyers. The quantity of cotton produced will be

enough to command a fair market price. Should the venture turn out sufficiently profitable, further trials and perhaps a considerable extension of cultivation would be assured. It will be necessary to address the Irrigation Department with a view to the grant of facilities for fortnightly waterings. Before leaving this subject I must acknowledge my obligations to the Colonisation Officers at Lyallpur and Sargodha for their valuable assistance. The conduct of M. Ijáz Hosain in carrying out all the sowings at Sargodha in the face of considerable difficulties, when plague was at its worst and the majority of the holdings had been deserted, deserves commendation.

Improvement by selection.

40. Selection from indigenous varieties is an extremely slow method of improvement. The result of several years' work at Cawnpore is practically *nil*. Hybridisation would shorten the process but we are not in a position to do this at present. Selection is receiving due attention at the Lyallpur Farm, the best local varieties having been collected there, and pickings being made from the best plants. At the instance of the Government of India, however, who have placed Rs. 5,000 at our disposal, the Local Government providing another Rs. 5,000, measures have been initiated towards checking the deterioration of seed and mixing of varieties consequent on the establishment of ginning mills. Seed of the best varieties, and of the best pickings, is being selected pure in the Lahore, Gurgáon, Hissár and Dera Gházi Khan Districts and in the Lyallpur Colony. If care is taken, there may in about three or four years' time be an enormous quantity of seed available from this selected seed. The policy adopted has been to make a thorough selection in the first instance and to only employ men who are willing to take trouble. This will in the end give the best results. The quantity of seed can be increased at a very rapid rate each year.

Selection of seed by ginning-mill proprietors.

41. Selected seed is being hand-ginned as a precaution. But in a year or two the cost of treating large quantities of seed in this way will be prohibitive. I hope that the owners of ginning mills will then come forward and co-operate, and that, once having made a start, they will endeavour to maintain the general quality of the local produce. The deterioration of seed has been brought to their notice this year. They have been urged to gin separately for seed purposes good lots of cotton of the 2nd and 3rd pickings. If this is done, sound and vigorous seed will be distributed. This seed will be of mixed kinds but nevertheless a distinct advance will have been made. The cost of selection on these lines will be insignificant and the mill proprietors have a direct interest in the matter.

Wheat.

42. Twenty-five varieties of wheat were sown on the Lyallpur Farm. Of these, five Punjab wheats and eight Australian cross-breds were those which had proved the best in past years. The Colonisation Officer kindly procured small seed parcels of the wheats most in favour in the colony. Some new varieties were added including *Baggi* of Leiah, *Muzaffarnagar* and *Daudkháni* of Dehli. The entire crop did splendidly up to the end of March. But unusually frequent showers in that month were followed by high winds and almost all the finest plots were blown down. The ear did not fill properly, and the quantity of selected seed grain obtained was disappointing. *Baggi* of Leiah, *Lal Kale Kasarwáli*, *Daudi* of Multán, the *Wadánaks*, and some Australians showed very good standing qualities. An area of about 30 acres has been sown in the current harvest, and it is hoped that we shall have seed for distribution next autumn. There are many applicants, the favourite varieties being *Muzaffarnagar* and *Daudkháni* of Delhi. It may be noted that these stand highest in the export market. The Australian varieties are not in demand although they are excellent qualities and bear well every year. It is pointed out that they have the defect of not being bearded. The result of this is that they are more exposed to the attacks of birds, and that they are likely to shed their grain unless they are reaped as soon as they are ripe. It will be interesting to test this next spring. Three trials of Australian wheat in the Gujrát District showed outturns of between 10 and 14 maunds per acre. It is reported that the crops were beaten down by the wind. At Lyallpur, as already stated, they stood up well. The classification of Punjab wheats was proceeded with. It is practically certain that there are in reality only eight varieties. The final classification will be reserved for the Deputy Director when he is appointed.

The manurial experiment has shown the value of *múng*, *másh* and hemp, whether ploughed in or removed. Hybridisation has been continued. Six acres are being applied to a series of hydraulic experiments with a view to ascertaining the most economic method of irrigating wheat in the colony as regards quantity and frequency of waterings. It will be some years before a definite result is obtained. A large number of similar experiments have been undertaken by the Irrigation Department, who are also instituting a comparison with the quantity of water actually applied by native cultivators. As the area available on the farm proved insufficient, fourteen acres of seed wheat have been sown by neighbouring cultivators who are under an engagement to sell us the produce at market rates.

Other experiments at Lyallpur.

43. Other experiments on the farm covered sugarcane, *jowár*, maize, indigo, *toria*, rape, barley, oats, gram and vegetables. It was a good year for sugarcane and the manured plot is reported to have given an outturn of as much as 61 maunds of *gur* per acre, whereas an unmanured plot last year yielded 29 maunds. The figures are high in both instances. Maize did well and there are some good kinds of *jowár*.

Salt-bush and *Paspalum dilatatum*.

44. Special practical trials, which were intended to be a final test, were undertaken with salt bush at Multán and Hissár. A selected piece of *kallar* ground was planted in three different ways, one portion with seed, another with seedlings and a third with cuttings. Water was only applied in the initial stages of growth. The reports received are wholly unfavourable. Further experience of *Paspalum dilatatum* establishes that it is unable to resist the drought and heat of the Punjab. Very few plants remain in the unirrigated plot at Lyallpur. It is, I think, unnecessary to make any further observations with either of these plants.

Results of the distribution of English fruit trees from the Mahásu orchards.

45. An enquiry has been made during the year from various Districts as to the manner in which trees supplied from the Mahásu orchards some seven or eight years ago have borne fruit. The following notes are of interest. In Dera Gházi Khan, pears and peaches have done well on the whole in the Khar Gardens below Fort Munro, but apples are rather poor owing to the dryness of the climate. In the Gurdáspur District, all the trees are doing very well at Bakloh and bearing fruit. At Dalhousie the results are not so good, hailstorms causing serious damage to the blossoms. Trees planted in the Gurdáspur District garden and distributed in the plains of the Hoshiárpur, Ráwalpindi and Bannu Districts have not done well. This is what one would expect, as the trees require a temperate climate. In the Hazára District, the young trees were planted in the three tahsil gardens which are at different elevations. At Abbottabad, apples, cherries and plums have borne good fruit. At Mansehra, peaches alone have succeeded. At Haripur, cherries, peaches and plums have given good results. Apricots have borne inferior fruit at all three stations and pears have not borne at all. In the Kángra District, white ants destroyed the trees in the Kángra and Derah Tahsil gardens. At Pálampur and Kulu no trees have borne fruit, the failure in Kulu being attributed to the unsuitable position of the garden. At Dharmsála, apple trees fruit well, but rot before ripening owing to the excessive rainfall. Apricots, peaches and plums bear fruit good in quantity and quality. Cherries are well grown, but do not fruit, with one solitary exception in a private garden. The Simla reports show fairly good results as long as the trees are not at a low altitude. Apples, apricots and peaches have thriven at Kotkhai, where the fruiting, however, varies from year to year. A favourable report has been received from Dír. It is impossible to generalise from the above reports. Failures are often due to want of care or to imperfect knowledge of the proper treatment of English fruit trees.

Distribution of young fruit trees in 1903.

46. Three thousand and eight hundred fruit trees were distributed last year in the Punjab and North-West Frontier Province. The Punjab contribution to the orchards has been reduced from Rs. 1,500 to Rs. 1,000, the Frontier Province taking over the other 500 rupees and receiving one-third of the annual allotment of about 5,000 young trees.

Shows of agricultural produce.

47. Shows of agricultural produce were held at Ferozepore and Lyallpur in January and March, respectively. At Ferozepore, the show coincided with the annual meeting of *mírábs* of the

inundation canals. Exhibits were numerous and some were of excellent quality. The encouraging results obtained were due largely to the efforts of Mr. Ernest Maya Dás, Honorary Secretary of the District Board, on whose suggestion the experiment was tried by the District Board. The Lyallpur Show took place at the time of the cattle fair and was equally satisfactory. Classes for carts and implements were well filled and a ploughing match was keenly contested. The great drawback is that it is difficult to ensure that exhibits are genuinely self-grown. But this is counterbalanced by the interesting and suggestive subject-matter for discussion which the show provides. Useful experience was gained, and these shows will be held again in 1905.

Distribution of castor cake as a manure.

48. It was mentioned in last year's Report that 100 maunds of castor cake manufactured at the Punjab Oil and Flour Mills were distributed free to cultivators in the vicinity of Lahore and Amritsar. The report received from the Lahore District is to the effect that the results were good with rice, red chillies and sugarcane. But the general opinion is that town-sweepings are cheaper. The Amritsar report is altogether unfavourable. Those who tried the cake found it, in some instances, to be absolutely harmful. It is possible that it was not applied in the proper manner although directions were issued. The value of castor cake as a manure is beyond question. In the circumstances described above, it is as well to allow the matter to drop for the present.

Aeromotor at Miánwáli.

49. The aeromotor sanctioned for experiments at Miánwáli arrived in the Spring. It is unfortunate that a heavy duststorm blew it down just as it was in process of erection. The damage has been repaired. There are now 3 or 4 windmill pumps at Miánwáli which have been put up by various departments. The Deputy Commissioner will, I hope, be able to furnish some useful data for next year's Report.

Miscellaneous.

50. An endeavour by the Deputy Commissioner of Jhelum to introduce Sirsa water-melons on the sandy soil of the Thal has not met with success. The Deputy Commissioner of Montgomery has distributed 196 maunds of *Básmatti* rice, a superior scented variety, to the zamíndárs of the Pákpattan Tahsil who paid the necessary expenses. The experiment is being tried in the villages irrigated by the "Kitchen Band." The Deputy Commissioner of Lahore reports a similar attempt to introduce a better kind of rice in the Chúnián Tahsil in 1903. The results were encouraging and a further trial is being undertaken. Arrangements have been made by Mr. Fagan at Hoshiárpur for the trial of a Baldeo water-lift which is highly recommended for places where water has only to be raised about three feet from tanks or canals. A reaper which was advertised as fitted for bullock power has been ordered from England for the Lyallpur Farm. In sending the reaper, however, the supplying firm have asked us to supply the proper yoke and pole for bullock draught, and it is doubtful if the machine will be suitable. A machine of this kind if not too expensive would be very useful wherever labour is scarce. The reaper has been landed at Karáchi.

Collections for the Reporter on Economic Products.

51. The Reporter on Economic Products did not frame a fresh programme of collections but merely asked the various Provinces to complete the collections of previous years. The arrears due from the Punjab appear to be inconsiderable.

Meteorology.

52. The number of rain-gauge stations has decreased by 1 to 188. Two have been abolished at Miáni and Mitha Tiwána in the Shahpur District and a new gauge has been placed at Sargodha. The rain-gauge at Shahjahánpur in the Gurgáon District has been removed to Khol. The police station at the former place having been abolished, there was nobody who could register the rainfall correctly. Inspections have been made as follows:—Commissioners, 3; Deputy Commissioners and Settlement Officers, 39; Assistant and Extra Assistant Commissioners, 14; and the Director of Land Records and his Personal Assistant, 36. Rain-gauges and registers are kept properly and the rainfall is correctly measured.

Chapter V.—Agricultural Education and the Publication of Agricultural information.

Agricultural education.

53. Education is not generally sought after by agriculturists except in a few districts. Mention may be made of Gujrát where the agriculturists outnumber the non-agriculturists in more than half the Primary Schools. It is reported that object lessons are not taught satisfactorily although an improvement is recognised. A better and more intelligent class of teachers is required, but to secure these the rates of pay will have to be raised. The Hoshiárpur District Board are arranging for increased expenditure towards this object. Mensuration is fairly well taught wherever surveying apparatus has been supplied to the schools. Instruction cannot be sound without this. In the Amritsar District, a Patwári itinerates and gives lessons in this subject. I believe that village Patwáris in the Central Provinces are expected to assist occasionally in this matter. The curriculum is suitable as a basis for training Patwáris and Kánúngos, but on condition that they proceed to the Middle Examination. Any one with a lower qualification should not ordinarily be accepted as a Patwári candidate. The question of instruction in agricultural subjects is under consideration. The first step is necessarily to train the teachers to explain and illustrate the prescribed object and reading lessons. I understand that it is proposed to give instruction in the native system of accounts. This will be very useful. The merits or demerits of the new rural Primary Schools have not been discussed by District Officers. Their representations on the subject have been submitted direct to the Educational Department.

Agricultural information.

54. Orders have been received for the translation in simple language of a useful Manual on the "More deadly forms of cattle disease in India," which has been published under the instructions of the Government of India. Two hundred copies will be distributed to selected agriculturists in each District, who will be asked to make the book known. The Manual aims at being a guide to cattle owners who are not within reach of professional assistance. The prescriptions can be made up in any native bazár.

Chapter VI.—Miscellaneous.

Co-operative Credit Societies in the Miánwáli District.

55. I again attach a copy of Captain Crosthwaite's remarks on the Co-operative Societies in the Bhakkar and Leiah Tahsíls of the Miánwáli District.—

"In these two tahsíls there are four Agricultural Co-operative Societies":—

(Tahsil Bhakkar).

1. Dhandla Society.
2. Paind Sháh Society (Chuni Janubi).
3. Shahani Society (Ghulám Haidar Khan of Kachi Shahani).

(Tahsil Leiah).

4. Marhanwáli and Rang Sháh Society (Ahmad Sháh, President).

"No. 1, the Dhandla Society, is the most important. Its President, Ahmad Khan Dhandla, takes great interest and is a respectable and influential man. The Society commenced operations in 1900 with 79 members. The number last year was 383, and it has now risen to 405. The members are being enrolled from the adjacent 4 villages. I have given them permission to enlist members from these villages. The capital of the Society is subscribed in grain by its members, and last year was Rs. 1,081-6-0. It has during this year risen to Rs. 1,151-5-6. Rs. 500 has during this year been advanced already in loan, Rs. 148 for bullocks and Rs. 352 for seed. The remaining capital will now be placed out on loan. Interest, or *munáfa*, has been taken at 1 seer of wheat per rupee. The income under this head this year has been Rs. 78. Last year it was Rs. 187. No borrower has failed to pay. The accounts are kept in Hindi by the village weighman and in Urdu by the Secretary. The remaining Societies are doing fairly well but on a smaller scale."

Issue to Patwáris of the revised Mensuration Manual and new Revenue Circular No. 30.

56. A revised edition of the Mensuration Manual has been published in English and Vernacular. A copy in Urdu has been given to each Patwári. A more important step has been the preparation of a new Revenue Circular No. 30—"Records of Crops and of Rights in Land and Agricultural Registers." This is an attempt to collect into one whole all existing rules and orders on the subject of the *girdáwari* registers, mutations, *jamábandís*, and village and

abstract note-books. The English Circular has been distributed, and cheaply bound copies in Urdu are ready for issue to Patwáris and Kánúngos. The inconvenience will be removed of having to refer to a number of books and circulars on most points of procedure. An additional drawback was that the inferior staff had very imperfect collections of the rules in force. It will be necessary to revise Revenue Circulars Nos. 28 and 29, and to re-cast the Revenue Rules so as to restrict them to those directions to which the force of law should be attached. A beginning has been made with a draft.

57. The accounts for the year ending the 31st March 1904 of the four gardens noticed annually in this report are as follows:—

District Gardens.

		Income.	*Expenditure.*
		Rs. a. p.	Rs. a. p.
Shahdara—			
Receipts from the Public	... Rs. 597 4 0		
Contribution from Govt.	... ,, 2,039 7 4		
		2,636 11 4	2,855 15 6
Shalimár ...	... ...	3,794 13 0	2,809 10 0
Kudsia ...	... ...	2,129 0 0	4,166 0 0
Roshanara ...	... ...	2,552 0 0	4,015 0 0

LAHORE:
5th December 1904.

W. RENOUF,
Director of Land Records and Agriculture, Punjab.

QUINQUENNIAL RETURN.

STATEMENT No. I.

TABLE SHOWING THE STATISTICS OF EXISTING PATWARI AND FIELD KANUNGO CIRCLES.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
District.	Number of field Kánúngos.	Number of Patwáris.	Area and Revenues (00's omitted). Area in acres. Total.	Area in acres. Cultivated.	Total assessment.	Number of fields.	Number of Khatauni holdings.	Average per Field Kanungo. Fields.	Average per Field Kanungo. Khatauni holdings.	Average per Patwari. Fields.	Average per Patwari. Khatauni holdings.	Rate of Patwári Cess per cent. on Land Revenue.	Remarks.
					Rs.								
Hissár	15	306	33,151	26,139	7,716	435,579	273,807	29,039	18,254	1,423	895	4-11-0 to 6-4-0	Rs. 5-3-4 in four tahsils, Rs. 4-11-0 in Budhláda and Rs. 6-4-0 in Sirsa.
Rohtak	10	242	11,542	9,655	9,574	711,056	290,534	71,106	29,053	2,938	1,201	3-4-0 to 3-8-0	Rs. 3-8-0 in Sámpla and Jhajjar, Rs. 3-4-0 in Rohtak and Rs. 3-0-0 in Gohána.
Gurgáon	14	310	12,415	10,014	12,094	1,091,321	336,146	77,952	24,010	3,520	1,084	4-0-0	
Delhi	11	225	8,157	5,463	8,504	1,134,884	272,133	103,171	24,739	5,044	1,209	4-0-0	
Karnál	15	333	20,154	11,548	10,727	1,146,409	335,202	76,427	22,347	3,443	1,007	4-4-0 to 5-7-6	Rs. 4-4-0 in Karnál and Pánipat, Rs. 5-7-6 in Indri, Rs. 5-6-8 in Thánesar, Rs. 4-11-0 in Kaithal and Rs. 5-6-8 in Pahowa.
Ambála	15	356	11,127	6,271	9,607	1,379,072	407,500	91,938	27,167	3 874	1,145	4-11-0	
Simla	1	8	490	100	175	48,111	9,489	48,111	9,489	6,014	1,186	(a) 3-4-0 to (b) 5-0-0	(a) In Simla and Kotgarh. (b) In Kotkhai.
Kángra	16	315	24,678	5,902	9,263	2,210,735	447,733	138,171	27,983	7,018	1,421	3-2-0 to 5-3-4	
Hoshiárpur	20	461	14,304	7,296	14,296	2,945,644	801,527	147,282	40,076	6,390	1 739	(c) 4-4-0 to (d) 4-2-8	(c) In Una. (d) In other tahsils.
Jullundur	14	402	8,703	6,975	14,877	2,040,805	557,178	145,772	39,798	5,077	1,386	3-11-2	
Ludhiána	14	390	8,910	7,655	11,103	1,479,592	354,815	105,685	25,344	4,932	1,183	3-2-0	
Ferozepore	16	356	26,118	21,855	11,798	1,350,591	458,250	84,412	28,641	3,794	1,287	(e) 4-11-0 to (f) 6-7-4	(e) In Ferozepore, Moga, Zíra and Muktasar. (f) In Fazilka.
Montgomery	13	207	29,532	6,843	4,235	920,106	136,471	70,777	10,498	4,445	659	6-4-0	
Lahore	15	321	23,001	13,226	12,306	1,806,670	430,211	120,445	28,681	5,628	1,340	5-0-0	
Amritsar	11	305	9,977	7,886	12,605	1,426,676	544,632	129,698	49,512	4,678	1,786	4-11-0	
Gurdáspur	17	426	11,675	8,510	15,383	1,578,049	615,865	92,826	36,227	3,704	1,446	4-11-0	
Siálkot	17	403	12,648	9,501	14,928	1,879,652	669,128	110,568	39,360	4,664	1,660	5-3-4	
Gujránwala, New Colony	17	317	19,046	11,544	10,713	1,172,679	313,955	68,981	18,468	3,699	990	5-3-4 to 7-8-0	
Gujrát	10	232	12,319	8,435	8,423	1,114,517	418,012	111,452	41,801	4,804	1,802	4-11-0	
Shahpur, Jhelum Colony	7	133	20,190	6,033	4,843	384,017	136,610	54,860	19,516	2,887	1,027	4-0-0	
Jhelum	11	207	17.713	7,484	7,575	1,437,638	367,827	130,694	33,439	6,945	1,777	6-4-0	
Ráwalpindi	9	183	13,091	6,004	5,448	971,433	353,247	107,937	39,250	5,308	1,930	4-11-0 to 6-4-0	Rs. 5-0-0 in Ráwalpindi, Rs. 6-4-0 in Kahuta and Murree and Rs. 4-11-0 in Gujar Khan.
Attock	8	186	26,966	10,332	5,894	740,054	308,633	92,507	38,579	3,979	1,659	§5-0-0 to *6-4-0	§ In Fatehjang. *In other Tahsils.
Miánwáli	11	176	40,771	7,423	4,441	703,658	211,284	63,969	19,208	3,998	1,200	5-0-0 to 6-4-0	Fixed Rs. 5-0-0 and fluctuating Rs. 6-4-0 in Leiah and Bhakkar; Rs. 5-0-0 in Isa Khel and Miánwáli.
Jhang, Chenáb Colony	27	441	43,318	18,214	14,165	2,634,087	219,673	97,559	8,136	5,973	498	5-5-0 (x) 7-8-0 (y)	(x) District. (y) Colony.
Multán	19	326	38,105	9,715	8,084	1,157,129	170,341	60,902	8,965	3,549	523	6-4-0	
Muzaffargarh	22	249	20,193	5,167	6,785	928,498	272,984	42,204	12,408	3,729	1,096	6-4-0	
Dera Gházi Khan	11	186	31,789	9,842	5,203	568,333	222,354	51,667	20,214	3,157	1,235	6-4-0	Pacca Rs. 5-0-0, Kacha Rs. 6-4-0.
Total	386	7,906	562,083	265,032	258,765	35,396,995	9,935,541	91,702	25,740	4,477	1,257	...	

NOTE.—This is a quinquennial statement.
It was prepared for the Report for 1902-03.

STATEMENT No. II—(See Chapter II).

STATEMENT SHOWING THE EDUCATIONAL QUALIFICATIONS OF PATWARIS AND PATWARI CANDIDATES, AND PUNISHMENTS AND PROMOTIONS OF PATWARIS FOR THE YEAR ENDING 15TH JUNE 1904.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	Patwaris and Assistant Patwaris.									Candidates.						
District.	Number.	Who have passed		Total of columns 3 and 4.	Percentage of column 5 on column 2.	Number who are agriculturists.	Number dismissed.	Number reduced, suspended or fined.	Number promoted to Kánúngóships or other appointments.	Number.	Percentage of column 11 on column 2.	Who have passed		Total of columns 13 and 14.	Number who are agriculturists.	Number who have passed the Patwári Examination.
		The Entrance or Higher Examination.	The Middle School Examination.									The Entrance or Higher Examination.	The Middle School Examination.			
Hissar	331	1	94	95	29	31	3	40	2	40	12	...	12	12	14	31
Rohtak	242	3	81	84	35	94	5	40	1	123	51	5	66	71	71	88
Gurgáon	332	5	134	139	42	70	24	211	21	124	37	6	74	80	56	94
Delhi	225	...	71	71	32	75	...	31	...	110	49	1	108	109	49	66
Karnál	353	2	105	107	30	87	...	29	5	254	72	13	197	210	70	72
Ambála	381	8	148	156	41	104	3	21	3	115	30	5	101	106	40	76
Simla	8	...	1	1	13	8	...	...	...	12	150	...	...	...	10	2
Kángra	315	..	46	46	15	121	4	51	3	131	42	4	88	92	57	115
Hoshiarpur	481	10	172	182	38	145	1	111	2	128	27	1	104	105	69	69
Jullundur	418	4	124	128	31	316	5	106	...	93	22	5	80	85	38	87
Ludhiána	307	3	151	154	50	74	2	29	...	75	24	3	66	69	27	63
Ferozepore	379	3	115	118	31	105	1	53	1	94	25	4	67	71	36	69
Montgomery	220	...	61	61	28	37	...	109	10	53	24	...	30	30	19	40
Lahore	334	1	120	121	36	75	3	103	3	144	43	6	94	100	52	92
Amritsar	325	5	118	123	38	73	3	98	5	71	22	1	63	64	18	42
Gurdáspur	481	5	167	172	36	140	3	198	1	134	28	8	82	90	33	122
Siálkot	420	10	82	92	22	94	...	138	5	195	46	8	157	165	69	106
Gujránwála	288	8	69	77	27	43	3	124	13	196	68	5	130	135	33	80
Gujrát	244	...	34	34	14	54	...	22	...	125	51	9	67	76	77	91
Shahpur	144	1	34	35	24	29	1	34	4	112	78	6	45	51	53	77
Jhelum Colony	130	...	48	48	37	21	5	10	4	42	32	1	21	22	17	24
Jhelum	221	3	62	65	29	54	3	138	...	75	34	5	37	42	36	34
Ráwalpindi	196	..	74	74	38	136	8	164	8	234	119	...	125	125	214	175
Attock	196	1	63	64	33	75	7	116	7	150	77	1	78	79	71	92
Miánwáli	178	1	63	64	36	27	5	39	1	158	89	11	73	84	56	129
Jhang	195	5	67	72	37	32	4	39	2	145	74	6	84	90	23	20
Multán	351	12	137	149	42	71	...	100	...	137	39	...	72	72	66	75
Muzaffargarh	264	5	102	107	41	74	...	132	9	59	22	4	42	46	17	45
Dera Gházi Khan	187	...	31	31	17	99	...	89	3	83	44	3	35	38	77	62
Chenáb Colony	362	13	263	276	76	108	12	333	1	136	38	5	111	116	39	105
Total ...	8,508	109	2,837	2,946	35	2,472	105	2,708	114	3,548	42	126	2,309	2,435	1,507	2,243

STATEMENT III—(See Chapter III).

STATEMENT SHOWING THE WORKING OF THE LAND RECORD AGENCY DURING THE YEAR ENDING JUNE 30TH 1904.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
		Mutations.					Partitions.							Detailed Jamabandis.			Number of villages in which crop inspections were checked.			District Kanungo's work.				
District.	Number of villages.	Number pending from last year.	Number instituted.	Total for disposal.	Number attested.	Balance unattested at close of year.	Number pending from last year.	Number instituted.	Total for disposal.	Number decided.	Area in acres involved in decided cases.	Cultivated area in acres included in column 12.	Number of cases pending at close of year.	Number of villages for which prepared during the year.	Number of villages in which checked by Collector and his Assistants.	Number of detailed jamabandis filed by due date.	By Collector and his Assistants.	By Tahsildars.	By Naib Tahsildars.	Number of days spent on tour.	Number of villages tested.	Number of inspections of Tahsil Offices.	Number of trijunction pillars repaired during the year.	Remarks.
Hissár	1,009	2,101	14,988	17,089	15,076	2,013	107	228	335	202	59,515	45,471	133	249	60	249	225	291	600	105	144	10	2	
Rohtak	514	3,190	14,421	17,611	14,535	3,076	37	175	212	151	4,326	3,108	61	128	50	128	735	233	336	127	210	9	..	
Gurgáon	1,264	988	47,705	48,693	42,683	6,010	32	272	304	201	13,861	12,951	103	506	...*	...	...	563	977	..	...	...	...	* Figures not available.
Delhi	824	1,589	11,703	13,292	10,137	3,155	72	150	222	160	9,762	3,310	62	198	12	198	97	218	174	179	712	7	...	
Karnál	1,436	2,710	25,285	27,995	24,809	3,186	70	170	240	153	22,043	13,644	87	362	62	356	291	245	502	150	348	9	...	
Ambála	795	3,493	30,349	33,842	30,299	3,543	103	273	376	274	9,641	...	102	452	1	444	71	312	318	156	205	10	348	
Simla	21	178	595	773	704	69	2	8	10	4	10	4	6	6	6	6	...	...	20	69	10	...	...	
Kángra	718	1,165	19,744	20,909	19,757	1,152	111	336	447	234	2,594	1,384	213	47	...	47	40	92	105	167	26	7	...	
Hoshiárpur	2,179	6,714	41,275	47,989	41,645	6,344	118	389	507	377	4,252	X	130	575	104	547	387	390	419	251	275	7	203	X Not available.
Jullundur	1,313	871	39,698	40,569	40,048	521	113	328	441	339	12,687	10,079	102	331	48	331	847	614	870	287	686	8	78	
Ludhiána	902	895	27,405	28,300	26,854	1,446	120	259	379	309	2,591	(a)	70	261	261	161	237	389	551	163	500	6	...	(a) This col. is left blank as there is no such entry in the Court Register.
Ferozepore	1,618	4,891	33,733	38,624	31,620	7,004	113	374	487	316	90,578	71,257	177	402	119	391	359	527	700	166	206	16	265	
Montgomery	1,435	249	3,322	3,571	3,241	330	29	101	130	96	26,929	9,186	34	387	37	344	178	499	530	100	175	8	153	
Lahore	1,612	4,902	16,681	21,583	19,661	1,922	79	172	251	122	16,890	9,538	129	474	23	372	884	541	638	69	184	7	1	
Amritsar	1,075	2,091	23,738	25,829	23,749	2,080	104	330	434	321	10,837	8,802	113	267	40	266	305	328	380	97	327	6	8	
Gurdáspur	2,365	1,400	29,951	31,351	29,176	2,175	42	228	270	193	6,961	4,721	77	636	65	636	312	590	640	106	200	8	6	
Siálkot	2,524	1,853	33,159	35,012	32,823	2,189	40	143	183	103	5,148	4,924	80	657	44	659	356	797	833	132	759	8	...	
Gujránwála	1,241	2,575	10,444	13,019	10,579	2,440	26	364	390	353	59,223	35,920	37	197	67	197	320	292	187	65	81	5	...	
Gujrát	1,431	1,333	20,913	22,246	19,823	2,423	112	272	384	188	8,686	7,354	196	253	130	253	273	1,052	620	136	217	10	...	
Shahpur	488	650	8,454	9,104	8,733	371	71	94	165	108	27,000	13,000	57	98	14	98	21	228	165	124	181	3	...	
Jhelum Colony	514	587	5,704	6,291	5,850	441	203	272	475	202	55,895	28,017	273	15	9	15	185	143	295	...	...	...	...	
Jhelum	955	3,983	18,928	22,911	19,154	3,757	97	179	276	196	4,244	2,633	80	224	49	224	78	242	191	144	240	6	...	
Ráwalpindi	1,166	4,477	52,163	56,640	47,771	8,869	76	837	913	467	28,206	25,190	446	...	...	...	1,073	478	1,567	...	...	...	...	
Attock	622	7,498	17,866	25,364	22,956	2,408	18	343	361	153	24,941	23,455	208	216	...	216	588	265	582	12	21	2	203	
Miánwáli	457	2,967	11,259	14,226	12,014	2,212	139	207	346	179	14,367	5,559	167	1	...	...	332	244	298	...	...	...	...	
Jhang	788	1,893	14,244	16,137	14,108	2,029	231	377	608	318	35,538	7,190	290	287	212	287	322	668	788	157	37	...	3	
Multán	1,449	334	8,845	9,143	8,723	420	35	233	268	203	10,574	5,151	65	406	33	359	292	597	1,067	127	184	10	73	
Muzaffargarh	761	902	8,915	9,817	8,720	1,097	214	242	456	303	14,570	6,312	153	219	40	197	292	290	886	101	68	6	2,479	
Dera Gházi Khan ...	761	2,746	13,831	16,577	13,814	2,763	110	221	331	227	27,012	10,283	94	198	43	198	160	298	463	231	502	2	498	
Chenáb Colony	1,411	1,946	1,970	3,916	1,926	1,990	5	10	15	12	3,692	2,781	3	417	159	382	62	323	580	...	...	...	...	
Total ...	33,656	71,171	607,252	678,423	600,988	77,435	2,629	7,587	10,216	6,468	612,573	371,224	3,748	8,469	1,688	7,546	9,319	11,759	16,082	3,421	6,498	170	4,320	

STATEMENT No. IV—(See paragraph 13).

ANNUAL ABSTRACT OF INCOME AND EXPENDITURE OF THE PATWAR FUND FOR THE YEAR ENDING 30th SEPTEMBER 1904.

1	2	3	4	5	6	7	8	9
District.	Balance in Land at beginning of year.	Demand.	Total receipts.	Expenditure on salaries of Patwáris.	Contribution to Kánúngo establishment.	Other charges.	Total expenditure.	Closing balance.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Hissár	9,633	59,639	70,675	48,615	...	2,460	51,075	29,233
Rohtak	4,734	58,732	40,974	35,170	...	1,730	36,900	8,808
Gurgáon	−4,246 By transfer	87,605 ...	46,656 25,000	42,873	...	8,333	51,206	16,204
Delhi	19,853 By transfer	40,931 ...	36,300 6,000	35,837	... By transfer	1,017 ...	36,854 15,000	12,299
Karnál	33,124	64,414	61,093	49,806	... By transfer	2,189 ...	51,995 6,000	30,222
Ambála	20,740	56,498	56,749	51,038	... By transfer	1,088 ...	52,126 10,500	14,863
Simla	152 By transfer	1,491 ...	991 500	946	...	109	1,055	588
Kángra	(a) 43,689	48,150	50,496	43,061	...	7,512	50,573	43,612
Hoshiárpur	28,809	59 968	62,427	59,775	...	2,475	62,250	28,986
Jullundur	20,263	55,088	59,543	56,918	...	1,980	58,898	20,908
Ludhiána	20,171	37,765	37,765	36,561	...	1,150	37,711	20,225
Ferozepore	(a) 20,471	62,766	64,007	54,004	...	1,866	55,870	28,608
Montgomery	12,405 By transfer	44,118 ...	44,360 7,000	26,826	...	9,390	36,216	27,549
Lahore	23,528	52,966	57,911	44,606	...	2,453	47,059	34,380
Amritsar	84,592	60,102	59,974	45,828	... By transfer	2,611 ...	48,439 7,000	89,127
Gurdáspur	26,121	78,130	74,411	63,670	...	3,104	66,774	33,758
Siálkot	43,884	87,299	82,955	60,374	...	2,272	62,646	64,193
Gujránwála	67,339	48,569	49,028	36,607	... By transfer	4,200 ...	40,807 2,804	72,756
Gujrát	9,867 By transfer	44,239 ...	41,366 2,804	34,846	...	1,778	36,624	17,413
Shahpur	8,077	30,615	21,328	19,467	...	1,300	20,767	8,638
Jhelum Colony	14,376	5,388	4,844	11,722	...	1,724	13,446	5,774
Jhelum	33,416	56,341	61,226	34,268	...	968	35,236	59,406
Ráwalpindi	12,847	27,905	40,757	38,224	... By transfer	15,086 ...	53,310 3,870	−3,576
Attock	... By transfer	25,366 ...	21,496 3,870	12,172	...	2,308	14,480	10,886
Mianwáli	(a) 9,014	28,857	29,179	23,916	...	2,599	26,515	11 678
Jhang	3,725	26,885	26,484	27,304	...	2,606	29,910	299
Chenáb Colony	2,01,689	1,73,234	1,72,677	44,220	...	1,45,980	1,90,200	1,84,166
Multán	47,358	89,924	89,467	48,768	...	5,153	53,921	82,904
Muzaffargarh	30,551	45,547	47,603	37,183	...	3,924	41,107	37,047
Dera Gházi Khan	(a) 31,683	34,000	37,975	25,870	...	1,173	27,043	42,615
Total	8,77,865	15,92,532	15,97,891	11,50,475	...	2,40,538	14,36,187	10,39,569

(a) Last year's figures were not correct, hence the difference.

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REPORT

OF THE

OPERATIONS OF THE DEPARTMENT

OF

LAND RECORDS AND AGRICULTURE,

PUNJAB,

For the year ending **30th** *September* **1905.**

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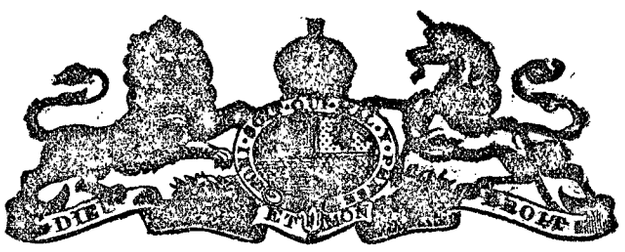

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NO. 95.

FROM

E. D. MACLAGAN, ESQUIRE,
Offg. Chief Secretary to Government,
Punjab and its Dependencies,

TO

THE SENIOR SECRETARY TO THE FINANCIAL COMMISSIONER, PUNJAB.

Dated Lahore, 22nd March 1906.

File No.

Revenue and Agriculture.

Agriculture.

SIR,

I AM directed to acknowledge the receipt of your letter No. 86, dated 7th February 1906, with which you forwarded the annual report on the operations of the Department of Land Records and Agriculture for the year ending the 30th of September 1905.

2. The Lieutenant-Governor is glad to observe that candidates for the post of patwari are being selected with greater care throughout the province, and that the educational qualifications of patwaris are better than they were previously reported to be. Now that the most marked cases of under remuneration have been removed, there would seem to be no reason why the test of the middle school examination should not generally be insisted on, though it would be of doubtful wisdom to require this qualification in those districts in which to do so would debar the agricultural classes from their due share in the patwar agency. His Honour is glad to see that the prospects of the patwaris are being carefully considered.

3. The financial position of the provincial patwar fund, in which both the colony funds have now been amalgamated, is eminently satisfactory, but the Lieutenant-Governor agrees with the Financial Commissioner in thinking that it would be premature to utilize the surplus for increasing the remuneration of the establishment. The Financial Commissioner's report on the proposal to convert the post of district kanungo into a naib tahsildarship will be awaited.

4. It is observed that although the mutation work done is generally satisfactory, the orders regarding the treatment of common land, absentees, and cases under Act XIII of 1900 are not yet fully understood. His Honour thinks that sufficient time has now elapsed since the issue of the orders in question to justify the expectation that they will be properly carried out, and would be glad if the Financial Commissioner will insist on special attention being paid by Revenue officers to such matters.

5. It is most unfortunate that in the year in which the operations of the agricultural branch of the department received a new impetus, there should have been so extensive a failure of the cotton crop, which militated against the success of the interesting experiments regarding acclimatisation of foreign varieties; and it is to be hoped that the inception of these experiments will not be hampered by such adverse circumstances in the following year.

6. The translation of the manual of cattle disease should, His Honour thinks, prove a most useful and welcome adjunct to the operations of the department, and every means should be employed to popularize it.

7. Sir Charles Rivaz recognizes the exceptionally hard work performed by the Director during the year under report, and, as this is probably the last time Mr. Renouf will submit the combined report of the two branches, His Honour takes this opportunity of congratulating him on a tenure of office marked by a steady advance and improvement in every direction.

I have, &c.,

E. D. MACLAGAN,

Offg. Chief Secretary to Government, Punjab.

Punjab Government Press, Lahore—22-3-06—1197—462—J. B.

No. 86.

FROM

L. H. LESLIE JONES, ESQUIRE,

Senior Secretary to the Financial Commissioner,

Punjab,

To

E. D. MACLAGAN, ESQUIRE,

Chief Secretary to Government, Punjab.

Dated Lahore, 7th February 1906.

SIR,

I AM directed to forward a copy of a letter No. 5108, dated 29th December 1905, from the Director of Land Records and Agriculture, Punjab (received in this office on 10th January 1906), enclosing his Annual Departmental Report for the year ending 30th September 1905, and to convey the following remarks.

2. The Financial Commissioner is glad to observe that the number of Patwari candidates has decreased, but the more than proportionate decrease of the number of candidates who are agriculturists is not so satisfactory. There is also a decline in the number of Patwaris who belong to the agricultural classes, although the total number of Patwaris has increased.

The educational qualifications of Patwaris are rather better than they were last year, but those of the candidates are hardly so good.

There is of course no lack of applicants for employment, but the Financial Commissioner hopes that if his proposals to increase the retiring gratuities and to make the past service of a Patwari pensionable when he is promoted to a pensionable post are accepted, the service will become more popular with the class of men whom we wish to attract. The sanction of Government has already been accorded to a proposal made by the Financial Commissioner that in districts where this is necessary the rates of pay should be revised without waiting for resettlement.

3. The cases of the 25 non-Patwaris (referred to in paragraph 4 of last year's review) who were accepted as Kanungo candidates in contravention of Land Revenue Rule 104 (*iii*) were disposed of by the Officiating Financial Commissioner, who for special reasons allowed the retention of some of them on the register. The Financial Commissioner is however surprised to learn that this rule has again been infringed in six instances in spite of the strict orders then issued, but until Mr. Renouf's report is received he must suspend judgment.

4. The inclusion of the Jhelum Colony Account in the Provincial Fund has recently been sanctioned by Government, but as in the case of the Chenab Colony, one-eighth of the income will be credited to the Irrigation Department. The surplus of Rs. 87,657 on the year's working of the Fund, compared with a calculated deficit of Rs. 11,187 last year (*vide* paragraph 6 of the review), is very satisfactory, but it is not enough to warrant a general increase in pay, and the Financial Commissioner would prefer to use it in some other way.

5. The increase of the pay of the Kanungo establishment desirable in itself also indirectly benefits the Patwar service. Mr. Renouf's suggestion that the post of District Kanungo should be converted into a Naib Tahsildarship

merits consideration, and the Financial Commissioner will examine it further. An amendment of Land Revenue Rule 106 would probably be required, in order to give full effect to the proposal and enable us to utilise the services of young and energetic men, while the interests of Field and Office Kanungos could be saved by giving them a large share in the number of appointments as Naib Tahsildar.

6. It is very fortunate that the new records of the Kangra District were saved from injury at the time of the earthquake. The Financial Commissioner fully concurs in Mr. Renouf's appreciation of the excellent work bestowed upon them by the late Mr. Levi, C.S., who was himself one of the victims of the disaster.

7. Mutation work has been kept well in hand, the number of attested cases being much larger than last year, and the work has apparently been better done. The pending file of partition cases is larger than it was, though the number of disposals has increased. Of the districts not mentioned by Mr. Renouf, Hoshiarpur, Attock and Muzaffargarh all show large pending files, and the attention of the Deputy Commissioners will be drawn to them.

8. The revised draft of Revised Revenue Circular No. 1 is at present with Government.

9. Chapter IV of Mr. Renouf's report deals mainly with matters which have formed the subject of other reports or correspondence, and the Financial Commissioner does not propose to review it at length. He has read with interest what is said in paragraph 53 about reaping machines, and he will ask Mr. Renouf to consider, in consultation with the Colonization Officers, whether some plan could be devised for the purchase of reaping machines by the Agricultural Department and for letting them out on hire to colonists willing to use them. Some arrangement would be necessary for their repair when required, and the cost of hire calculated to provide interest on capital and cost of maintenance would have to be compared with the cost of labour to the colonists.

10. In addition to his work as Director of Land Records, Mr. Renouf has had to deal almost unaided with a large field of agricultural experiments for which a large and adequate establishment will shortly be employed, and he has very fully earned the appointment of the first Director of Agriculture in this Province. In addition to the current work connected with his double duties, Mr. Renouf has also had to frame a number of proposals, which have been characterised throughout by great care and common sense, for the extension of the new Department, and in the Financial Commissioner's opinion he deserves in a large degree the thanks of Government.

I have the honour to be,

SIR,

Your most obedient Servant,

L. H. LESLIE JONES,

Senior Secretary to the Financial Commissioner, Punjab.

Punjab Government Press, Lahore—26-3-06—1570—435—K. C. M.

No. 5108.

FROM

W. RENOUF, ESQUIRE, C. S.,

Director of Land Records and Agriculture, Punjab,

To

THE SENIOR SECRETARY

TO THE FINANCIAL COMMISSIONER,

PUNJAB.

Dated LAHORE, *the 29th December* 1905.

SIR,

I HAVE the honour to submit the Annual Report of this Department for the year ending 30th September 1905.

I have the honour to be,

Sir,

Your most obedient servant,

W. RENOUF,

Director of Land Records and Agriculture, Punjab.

ANNUAL REPORT

OF THE

DEPARTMENT

OF

LAND RECORDS AND AGRICULTURE, PUNJAB,

For the year ending 30th September 1905.

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

CHAPTER I.—Prefatory.

Personal.

I HELD charge of the Department throughout the year, with the exception of the period from 17th June to 20th August. Mr. Abbott officiated as Director in addition to his other duties from 17th June to 31st July, and Mr. Fagan acted from 1st August to 20th August. Sheikh Fazal Karim, Extra Assistant Commissioner, was Personal Assistant, and has rendered useful help.

Tours.

2. I was on tour for 113 days in the districts of Amritsar, Gurdaspur, Kangra, Shahpur, Lyallpur, Ambala, Jullundur, Hoshiarpur, Muzaffargarh, Multan, Karnal, Hissar, and Gujranwala, inspecting tahsil and district offices. Notes were also written on the sufficiency of tahsil office staffs. Cattle-shows were attended at Amritsar (both fairs) and Lyallpur, as well as the Agricultural Show at Lyallpur. The copying of land records in replacement of those destroyed by fire at Dharmsala was inspected in detail at Kangra. Three visits were made to the Lyallpur Farm and two to the Sargodha Seed Farm. The work of patwaris, field kanungos and sadr kanungos was examined in the field in a number of districts. The time available for inspection work was again curtailed by a journey to Pusa in January to attend the first annual meeting of the Board of Agriculture, and by a four weeks' tour in March with the Director of Land Records, Bombay, and the Collector of Ahmednagar, who had been deputed to the Punjab to study the system under which our record of rights is maintained. Mr. Abbott was 21 days on tour during the monsoon. My Personal Assistant was 166 days in camp, inspecting 15 tahsil offices and four district offices. He again checked the autumn and spring girdawaris in several districts.

Strengthening of the patwari, kanungo and Naib Tahsildar establishments entertained in the Multan and Muzaffargarh Districts for the working of the fluctuating assessment.

3. It having been represented that the patwari, kanungo and Naib Tahsildar establishments entertained in the Multan and Muzaffargarh Districts were inadequate for the proper working of the systems of fluctuating assessment introduced at the two last Settlements, I was directed by the Financial Commissioner to make a report on the subject after visiting each district and consulting local officers. A special tour was accordingly undertaken in January and February and specific proposals were submitted in due course.

Examination of Naib Tahsildar and kanungo candidates.

4. Two examinations of Naib Tahsildar candidates were again held during the year, in January and August, at which 183 candidates appeared. Three hundred and thirty-two kanungo candidates were examined by the Personal Assistant at seven centres.

Development of the Agricultural Department.

5. The second half of the year under report was largely occupied with the preparation and development of schemes for the extension of the Agricultural and Veterinary Departments, to which more detailed reference will be made in Chapter IV. In view of the contemplated early creation of a separate Department of Agriculture, it is probable that this is the last occasion on which this report will include the chapters devoted to agricultural enquiry and education.

CHAPTER II.—Land Records Establishment, (*See* Statement II).

Patwári candidates admitted during the year.

6. There is a satisfactory decrease in the number of candidates admitted during the year. The figures are 785 compared with 1,050 in 1903-04, 71 per cent. have passed the Middle Examination. Lower qualifications have been accepted in the case of agriculturists, or of sons of patwaris. With the latter, early training by their parents affords considerable compensation for deficient education. But reports received from some districts as, for example, Rohtak and Karnal, show conclusively that the middle standard is ordinarily absolutely essential. Proposals are now before Government for doubling the amount of the retiring gratuities paid to patwaris. If these are sanctioned there should be no difficulty in future in insisting on the middle standard except, perhaps, in some districts where education is still backward. There is a tendency in some of these districts for certain classes to absorb the majority of the appointments. This has been brought to notice with regard to Banias in Hissar, Mahajans in Rohtak, and Khatris and Aroras of Kot Kamalia and Pakpattan in Montgomery. It will be remembered that it transpired last year that almost all the candidates in Gurgaon were taken from three families. There are welcome evidences in all the district reports that much greater care is being taken in the selection of candidates. This is a matter of vital importance and one too often neglected in all departments. There is no lack of applicants for employment. The claims of agriculturists have received ample recognition.

Number of patwári candidates.

7. The number of patwari candidates has fallen from 3,548 to 3,291 and the percentage on the total number of appointments from 42 to 38. Sixty-nine per cent. have passed the Entrance or Middle Examination, and there are 1,400 agriculturists. Two thousand and fifty men have passed the patwari examination. The percentage of candidates to posts available exceeds 50 per cent. in Simla, Jhang, Karnal, Shahpur Rawalpindi and Mianwali, and in some of these districts the register would appear to be somewhat congested. Early action is promised in Simla and Jhang towards reduction to more moderate limits. Candidates' lists have been scrutinised and revised in many districts during the year. Those of the districts in the Lahore and Jullundur Divisions now show very reasonable figures. My Circular No. 14 of 1905, which issued recently under the orders of the Financial Commissioner, lays down the general rule that district lists should not exceed 30 per cent. of the number of posts, except where there are settlements or colonisation operations in progress, or for special reasons, and that any excess should be explained in the Annual Report on Land Records.

Patwári Schools.

8. Patwari Schools were opened in the districts of Hissar, Rohtak, Hoshiarpur, Ferozepore, Jullundur, Amritsar, Gujranwala and Jhelum. Candidates received practical training in the field under the supervision of capable and experienced patwaris in the districts of Simla, Gurgaon, Karnal, Rawalpindi and Attock, examinations being held at Gurgaon and Rawalpindi. Great attention was given to the selection and training of candidates in the Rawalpindi Settlement; candidates being only accepted after a preliminary period of probation.

Patwári establishment and pay.

9. Additions to establishment were sanctioned in Multan and Muzaffargarh owing to the proved inadequacy of the staff for the preparation of the elaborate returns connected with the local system of fluctuating assessment. Increases in Rawalpindi, Attock, Dera Ghazi Khan and Gujranwala have followed revisions of Settlement. In some cases considerable extra staff has been entertained, especially where fluctuating assessments are at all complicated. The rates of pay of patwaris in Ludhiana have been raised to Rs. 13, Rs. 11 and Rs. 10. The most marked instances of under remuneration have now been removed. A general levelling up to the standard rates of Rs. 14, Rs. 12 and Rs. 10 will be possible at an early date with the gradual and steady expansion in Patwar Fund income.

Efficiency of patwáris.

10. Thirty-six per cent. of the patwaris and assistant patwaris have now passed the Middle or Entrance Examination. Taken all round the staff is fully equal to the intelligent and satisfactory discharge of its duties if under adequate and vigilant supervision. The practice of allowing old patwaris to remain on the active list long after they are past their work has frequently resulted in notable instances of inefficiency. There should be no hesitation in compelling them to retire when they are eligible for more liberal gratuities.

Conduct of patwáris.

11. There were 86 dismissals for various reasons. Of these, only 7 were for serious offences, such as forgery, bribery, dishonesty, overcollection, false report and preparing a wrong *fard bach*. The rest were mainly cases of incompetency, continued neglect of duty, absence without leave and money lending. Gurgaon returns the large number of 17 dismissals. But reading the district report, it seems very likely that these are almost all ordinary superannuations which have been included by mistake. Precise instructions will issue for the more accurate filling in of this column in the statement. Petty fines, suspensions, and grade reductions, although a little less than last year, have again been numerous. Most of the punishments were inflicted in settlements where a very high standard of work has to be insisted on. A large number of criminal complaints have again been lodged against the patwaris of the Sialkot District. There were 40 in all this year, the alleged offences having very little direct connection with the discharge of their duties and ranging from common assault to abduction and burglary. Twenty-six cases were dismissed summarily, and only 2 convictions were obtained under Sections 177 and 325 of the Indian Penal Code. The subject of the apparently strained relations between some of the patwaris and the people is receiving the attention of the Deputy Commissioner. On the whole the conduct of patwaris has been satisfactory and shows a gradual improvement.

Rewards.

12. Gratuities on retirement were sanctioned for 61 patwaris to the amount of Rs. 7,440. Five men in the Lahore District were given land in the Chunian rakhs in lieu of rewards. The expenditure in the preceding year was Rs. 10,365, and I am surprised to find that the removal of the restrictions described in paragraph 11 of last year's report has not resulted in more superannuations. There is, however, no reason to believe that any just claims have been overlooked. It would appear then that at present only 20 per cent. of the men who enter the Department stay on sufficiently long to earn gratuities, the rest obtaining promotion to better posts, retiring prematurely, or dying in service. With a meagre retiring gratuity, there must be a goodly proportion of men who elect to serve on long after the age when retirement is compulsory in other branches. The anticipated enhanced gratuities will make it easier for Collectors to discharge non-effectives without inflicting any hardship upon them.

Promotion obtained by patwáris.

13. There were only 36 kanungo vacancies this year against 83 in 1903-04. Twenty-three patwáris were appointed, representing the two-thirds minimum, approximately. The number of patwaris accepted as kanungo candidates was only 55 out of 139. This is considerably below the prescribed proportion of one-half. The shortage is due mainly to Mianwáli, where all the 15 selections were non-patwaris, there being, it is reported, no suitable candidates among the patwaris. Very strict orders were issued last year against the acceptance as kanungo candidates, in contravention of Revenue Rule 104 (*m*), of non-patwaris possessing lower qualifications than the Entrance Examination. The rule has again been disregarded in six instances. Explanations are being called for and the cases will be submitted to the Financial Commissioner for orders in due course. Patwaris secured 39 miscellaneous appointments, such as Siaha Nawis, Tahsil Judicial Moharrir, &c.

Introduction of a new system of Patwár Fund accounts. See Statement IV.

14. The Patwár Fund scheme under which expenditure is against budget grants was introduced with effect from the 1st April 1905. Some difficulty was naturally experienced in preparing budgets under specific heads for the first time. The budgets have thus far worked satisfactorily, and it has been possible to meet all applications for extra grants by transfers between districts. Statement IV, the annual abstract of income and expenditure for the year ending the

30th September 1905, is a transition account, as it has been excerpted partly from registers kept under the old system up to 31st March 1905, and partly from registers kept thereafter under the new system. District balances were all amalgamated into a Provincial balance on the 1st April last, but they have been calculated once more as they work up to the total Provincial balance.

Income and expenditure in 1904-05. (Statement IV).

15. The total receipts of the year under report amount to Rs. 15,46,520, this being Rs. 51,371 less than last year. An expansion of revenue in the Jhelum Colony has compensated in part for decreases in some districts due to less favourable agricultural conditions. Expenditure on "other charges," including stationery, patwárkhanas, retiring gratuities, patwári schools, &c., amounts to Rs. 1,79,823. This is Rs. 60,715 less than in 1903-04, when the figures, however, included a large item of one lakh of rupees paid by the Chenab Colony to the Irrigation Department as arrears towards the cost of the canal patwari establishment. There is a surplus of Rs. 87,657 on the year's working.

The financial position of the Patwár Fund.

16. The financial position of the Patwár Fund is much more favourable than was anticipated in the forecasts prepared when the provincialisation scheme was under discussion. The estimates framed at that time were admittedly cautious. But the chief disturbing element has been the subsequent inclusion of the Chenab Colony Fund, with its large annual surplus. The Provincial Fund may now be expected to show an increasing surplus every year. The closing balance of Rs. 11,24,998 is subject to a deduction of Rs. 1,30,902, which is due to Provincial Funds for the cost of the field kánúngo establishment in 1904-05. The net balance is, therefore, Rs. 9,94,096. The utilisation of this balance and of the annual surplus is a matter which will doubtless be considered in the current year. The present surplus, large as it seems, would not go far if it were desired to raise the pay of the entire patwári establishment, numbering 7,906 patwáris and 684 assistant patwáris. A general increase of Re. 1 per mensem, for instance, would cost Rs. 1,03,080 per annum.

Kanúngo candidates.

17. The number of kanúngo candidates is somewhat excessive in most districts. Attention was drawn to this in November under the orders of the Financial Commissioner, in my Circular No. 14 of 1905, and it was suggested that the number need not ordinarily exceed half the number of appointments. At the same time it was recognised that no hard and fast rule could be laid down for so small a list, and a wide discretion was left to Collectors.

Kánúngo examinations.

18. Kanúngo examinations were held at Delhi, Gurgaon, Jullundur, Wazirabad, Rawalpindi, Multan and Peshawar. Three hundred and thirty-two candidates appeared from the Punjab and the North-West Frontier Province. Of these 239 were entirely, and 34 partly, successful. Certificates of efficiency were granted to 122 men who had also received practical training in the field. There are only two kánúngos who do not possess this certificate.

Efficiency and conduct of kanúngos.

19. The kánúngos are generally men of sufficient ability and of ample experience. The pay of the service has been improved materially with effect from the 13th March 1905. District kánúngos now receive salaries rising from Rs. 60 to Rs. 80 by increments of Rs. 4. Tahsil office kánúngos draw Rs. 40 instead of being graded with the field kánúngos on Rs. 30 and Rs. 25. Field allowances, which were only given to half the field kánúngos, have been made available for all. The two last measures have removed distinct grievances. It was difficult in the past to transfer a good kánúngo on the same pay to the charge of the tahsil office, as this involved the loss of his field allowance. It was also a hardship to require a man to maintain a pony without giving him a sum for its upkeep.

The improvement of the supervising agency.

20. In paragraph 16 of last year's report I wrote at some length on the very important duties assigned to district kánúngos in our system for the maintenance of land records. I also pointed out the difficulty which is experienced in retaining a really good man in this post, owing to the rapidity with which he

receives promotion to a Naib Tahsildarship. In the end the appointment comes down to a man of average ability. With no prospect of further advancement, very often with slender authority and decayed energy, he is of very little value as a driving power, and there ensues a general slackness throughout the district establishment. Further experience has strengthened my view that it is urgently necessary that something should be done in this matter. I made a special endeavour last winter to find suitable candidates for two Deputy Commissioners and instituted enquiries in several districts but without success. This was due, not to defects in the recruitment and training of kánúngos, but to the fact that the best men become Naib Tahsildars by direct selection, or very soon after appointment as district kánúngo. The recent increase in the district kánúngos' pay will lead to no improvement, for it will not deter a good officer from seeking a Naib Tahsildarship. The remedy appears to be to convert the post of district kánúngo into a Naib Tahsildarship. This would at once enable us to retain the services of the best qualified men for land records work. The enhanced influence which would follow on the improved status would also be a material gain. As the rates of pay of Naib Tahsildars are Rs. 60, Rs. 80 and Rs 100, this measure would entail very little extra expense. Without a general tightening of supervision, we are not likely to derive the maximum advantage from the steps now being taken to improve the pay and prospects of patwaris and kánúngos.

Promotion of kánúngos to higher posts.

21. Kánúngos have received satisfactory promotion during the year. The district kánúngo of Amritsar has been confirmed as a Tahsildar. Two field kánúngos in the same district have been made *sub pro tem.* Naib Tahsildars. In Hoshiarpur, a field kánúngo has been appointed reader to the Revenue Assistant; two field kánúngos have become officiating Naib Tahsildars, and two men have been confirmed as Tahsildar and Naib Tahsildar, respectively. One man has been appointed Manager of a Court of Wards. The district kánúngo of Ludhiana is officiating as head clerk in the District Office. District kánúngos of Ferozepore, Montgomery and Jhelum are officiating as Tahsildars or Naib Tahsildars. Two field kánúngos in Gurdaspur have been appointed Naib Tahsildars, and field kánúngos from Gurgaon, Gujrat, Jhang, Muzaffargarh and Dera Ghazi Khan are officiating as Naib Tahsildars.

CHAPTER III.—Utilization of Land Records (*See* Statement III).

Record of rights.

22. Permanent records are well cared for and in good order. A new record room has been sanctioned for Ferozepore, where the accommodation was cramped, white-ants being also a source of trouble. Arrangements have been made to enlarge the Muzaffargarh record room and to improve it as regards lighting and ventilation. Revenue records have been completely separated from those in the general record room, with the exception of the papers of two tahsils in Ludhiana and one tahsil in Jullundur, the cause of delay being want of space. Rebinding has been or is to be done in Rohtak, Karnal, Simla and Sialkot.

Replacement of Kangra records destroyed by fire.

23. The copying of records to replace those destroyed by the Dharmsala fire of February 1904, was completed some time before the earthquake of 4th April 1905. Those buried in the earthquake were fortunately salvaged without injury. It is difficult to speak too highly of the excellent manner in which the copying operations were organised and carried out, under the directions of the Deputy Commissioner and the late Mr. Levi, C. S., Revenue Assistant, in Kangra. A very high degree of accuracy was attained.

Mutations.

24. There were 790,214 mutations for disposal during the year. Institutions rose from 607,256 to 714,696 cases and attested cases from 600,998 to 701,083. A very creditable endeavour was thus made to deal with the larger volume of work. The balance of 89,131 cases, works out to less than three cases per village and is by no means excessive. There are very few cases which have

been pending more than two years. The heaviest work was again in Rawalpindi, Gurgaon, Hoshiarpur and Jullundur. In spite of the difficulties experienced in Kangra, the staff succeeded in keeping the work up-to-date. The large increase in the total number of institutions is to be attributed to deaths from plague and to the measures taken to remove the names of absentees. (Financial Commissioner's Circular No. 2 of 1903). Fourteen extra Naib Tahsildars were employed (as against 12 last year) for varying periods in the districts of Hissar, Ambala, Hoshiarpur, Ferozepore, Amritsar, Gurdaspur, Sialkot, Gujranwala, Gujrat and Jhelum. As these must necessarily be men with very little experience, it is essential that they should receive close supervision and guidance at the start and that they should be made to understand that thoroughness is the first consideration. Two Deputy Commissioners have animadverted on their work, but otherwise they appear to have done fairly well. The general standard of work was satisfactory. The staff are somewhat slow to understand new orders, as, for instance, those connected with the entries regarding common land, the working of the Alienation of Land Act and the removal of the names of absentees. But an improvement in every respect was noticeable last year. Great pains have, in particular, been taken to scrutinise and, if necessary, review orders dealing with transfers of land.

Partition cases.

25. The number of fresh partition cases, 7,578, is practically the same as in 1903-04, but disposals have again failed to keep abreast of the work, although they have risen from 6,468 to 6,977 cases. The pending file now amounts to 4,341 cases. Heavy arrears in Gujranwala (489 cases) and in the Jhelum Colony (345 cases) are due to killabandi; that is to say the re-arrangement of fields into squares or rectangles. Settlement operations account for somewhat large balances in the Karnal, Rawalpindi, Attock, Mianwali and Jhang Districts. It will be noticed that the totals of partition and mutation cases pending from last year as entered in columns 3 and 8, respectively, of Statement III, do not quite agree with the closing balances shown in the report for 1903-04. The districts concerned have been requested to compile these statistics with greater care and accuracy in future.

Annual records.

26. Detailed jamabandis were prepared for 9,058 villages and almost all were filed by due date. The only notable delay was in Gurgaon, where 206 out of 317 were late. No detailed jamabandis were prepared in Rawalpindi and Kangra, in the former district owing to settlement operations, and in the latter on account of the staff being engaged in replacing the records destroyed by the fire at Dharmsala. It would appear that no jamabandis were checked by the Collector or his Assistants in Gurgaon, Simla, Jhang, Multan and Dera Ghazi Khan. In some of these cases, it is obvious that the figures have been omitted by mistake. More inspections should have been made in Hoshiarpur, Montgomery, Shahpur and Attock. In Hoshiarpur this is attributed to the illness of the Revenue Assistant and to changes in Revenue Assistants. The Ludhiana statement shows that every jamabandi was checked by the Collector and his Assistants. This is scarcely possible. It is probable that the check by Tahsildars and Naib Tahsildars has been wrongly included. Explanations of the features noted above are being called for. Crop inspections were checked on a large scale in all districts.

Abstract village note-books.

27. Abstract note-books are up-to-date and carefully maintained as regards statistics. Observations have been recorded in them by District Officers in Hissar, Rohtak, Delhi, Karnal, Hoshiarpur, Amritsar, Sialkot, Gujranwala, Jhelum and Dera Ghazi Khan, and in some other districts by the Revenue Assistants. The Deputy Commissioners of Hissar and Jhelum derived valuable assistance from them in connection with suspensions and remissions of land revenue. New heading forms adapted to local conditions are being framed for each district as it comes under settlement.

Survey marks

28. The maintenance of survey marks and tri-junction pillars is receiving considerable attention. They are generally in good condition, except in Delhi, Hoshiarpur, Gurdaspur, Shahpur and Rawalpindi, where steps are being taken for their repair

29. A new schedule of rates for the supply of vernacular and bilingual patwari forms was drawn up after a lengthy correspondence with the Presses. Some doubtful points were made clear, and the old schedule was improved and amplified in various ways. Rates were reduced in one or two minor instances. The work is still distributed among a number of Presses.

Supply of patwâri stationery and forms. Director of Land Records' Circular No. 1 of 1905.

30. The old backed country mapping sheets on paper 24″ × 30″ weighing 42 lbs. per ream, have been practically condemned as unfit for any permanent purposes owing to the poor quality of the paper used. A paper, weighing 72 lbs. per ream, has now been substituted, which is much more durable and which is good enough for the patwaris' copies of village maps. The new mapping sheets cost Rs. 17-4 per hundred ruled into squares, against Rs. 14-4 for the old sheets and Rs. 34 for English mapping sheets. A much needed improvement has been effected in the accuracy of the squares. It was discovered that defects were chiefly due to printing while the sheets were still damp after backing and to subsequent shrinkage in drying. In spite of every precaution, perfect accuracy appears to be unattainable, but the error has, I think, been reduced to a negligeable minimum. Similar difficulties have been experienced in obtaining brass plotting scales with correct inch divisions and the perpendicular inch lines exactly at right angles to the sides. An improvement has been effected, but the native contractors continue to give trouble, and a large number of scales have to be returned. We shall probably be compelled ultimately to spend more on these plotting scales, so as to ensure the accuracy essential in mapping.

Supply of country mapping sheets and plotting scales.

31. The sanction of the Financial Commissioner has been accorded to the disbursement by postal order of the pay of those patwárís and assistant patwárís whose circles are more than a day's journey from the tahsil. The postal commission will be debited to the Patwár Fund. It is anticipated that a net saving will result to the Patwar Fund having regard to the time formerly occupied by the journeys to the tahsil. This is also a valuable concession to the patwárís concerned who had to travel at their own expense.

Director of Land Records' Circular No. 5 of 1905.

32. The preliminary report of crop experiments prescribed in paragraph 14 of Revised Revenue Circular No. 13 has been dispensed with as unnecessary.

Director of Land Records' Circular No. 6 of 1905.

33. In view of the growing importance of toria and in order to obtain greater uniformity in its treatment in crop inspections and crop returns it has been decided that it shall in future be made the object of a special early Rabi *girdawari* at such time between the 15th November and the 15th January as the Deputy Commissioner may consider most suitable. Instead of being shown partly as a kharif and partly as a rabi crop, the entire area under toria will be entered in the rabi crop return and separately from rape, taramira and mustard. The turnip crop is to be observed at the same *girdawari*.

Director of Land Records' Circular No. 7 of 1905.

34. Instructions have been issued with reference to the period after which annual files of registration counterfoils and memoranda may be destroyed.

Director of Land Records' Circular No. 8 of 190 [illegible]

35 A fourth forecast, to be submitted by 25th January in each year, has been prescribed for cotton in accordance with the orders of the Government of India. Steps have also been taken with a view to the publication of more complete and accurate information. The chief difficulty lies in the framing of an estimate of yield and special directions have issued on this point. Arrangements are being made to include figures for the Native States attached to the Punjab in the Provincial cotton forecasts.

Director of Land Records' Circular No. 11 of 1905.

36. The revision of the Famine Code has necessitated the issue of a new schedule of "normal" "warning" and "scarcity" rates for the principal food staples, including wheat, barley, maize, jowar, gram, bajra, and rice, and the amendment of Revenue Circular No. 1, dealing with weekly telegraphic weather, health, and crop reports.

Director of Land Records' Circular No. 16 of 1905.

CHAPTER IV.—Scientific enquiry under Provincial or Imperial Direction.

The Agricultural Department.

37. The year will always be notable as that in which practical steps were taken towards the organisation of Provincial Agricultural Departments on a satisfactory basis. A sum of 20 lakhs was generously set aside by the Government of India as a recurring grant for this purpose beginning from 1905-06, and out of this, 2½ lakhs have been allotted to the Punjab. This will be further supplemented by a grant from Provincial Funds. The programme for the development of the Agricultural Department, including the Veterinary Department, can only be briefly sketched in this report. An important feature of the scheme is the formation of a Department of Agriculture in charge of a wholetime officer. The Secretary of State's sanction will probably be received in time to allow of the separation of the Departments of Land Records and Agriculture being made early in the next financial year. Proposals for the new office establishment and for the reorganised Land Records Office, as well as plans and estimates for the new buildings required, have been submitted to Government.

Proposed Agricultural College and Research Institute at Lyallpur.

38. A combined Agricultural College and Research Institute will be established at Lyallpur, the staff including a Principal and Professor of Agriculture, an Agricultural Chemist, and an Economic Botanist. A Mycologist and an Entomologist, who will be appointed for the Province, will be mainly peripatetic officers, but their headquarters will be at Lyallpur, and they will arrange to deliver lectures in their respective branches of agricultural science. The college will train men for the Agricultural Department and also teachers of agriculture for the normal schools under the control of the Department of Public Instruction. These teachers will be required to impart a knowledge of practical agriculture to candidates in training for masterships in primary schools, and in particular to instruct them in the methods of explaining object and simple science lessons in subjects connected with agriculture. The college should also be of great value in preparing young men for a land-agent's career, and in giving an agricultural education to sons of large landowners. Preliminary plans and estimates are before Government and an endeavour will be made to open classes in April 1907.

The General Branch of the Agricultural Department.

39. The General Branch of the Department will have charge of experimental farms, one of which will be placed in each representative tract. It will also have the important duty of bringing tried new varieties and improved methods to the notice of the agricultural community by means of demonstration plots and farms. The Lyallpur Farm will eventually be extended to 500 acres, and a second large farm for the Eastern Punjab will be established as soon as a suitable site has been secured. It is proposed to locate it either in the Jullundur or the Ludhiana District. Results obtained at these two farms would apply generally to the whole of the Punjab with the exception of the following tracts:—

(*i*). The Gurgaon and Delhi Districts and portions of the adjoining districts, which are meteorologically part and parcel of the United Provinces.

(*ii*). The large sandy tracts of scanty and uncertain rainfall in Hissar, Sirsa and Fazilka.

(*iii*). The extensive tracts dependent on inundation canals in Multan, Muzaffargarh and Dera Ghazi Khan.

(*iv*). The Salt Range plateau.

(*v*). The hilly district of Kangra.

It is accordingly intended to place smaller 200 acre farms in the first three tracts and 100-acre farms in the last two. A large portion of the area of each of the farms would be set apart for seed growing. Some 200 acres would be reserved for cotton on the 500-acre farms, and 100 acres on the 200-acre farms. For purposes of demonstration, plots will be hired wherever required, or other suitable

arrangements will be made. The creation of District Agricultural Societies and the extension of agricultural shows, including shows of implements, are matters which will engage the attention of the department as soon as the necessary preliminary work has advanced sufficiently.

Proposed staff of the General Branch.

40. The personnel of the General Branch will consist of a supervising staff of two Deputy Directors of Agriculture, East and West Punjab, and three Assistant Directors. A subordinate staff of thirty Agricultural Assistants will provide a skilled assistant for work in each district. We have at present only a Deputy Director, a Farm Manager and three assistants, and the complete recruitment of the staff will necessarily take several years. Specialists are by no means easy to obtain, and after their arrival they have to study local conditions and acquire a knowledge of the vernacular. The subordinate grades have also to undergo a period of training. However, the necessary preliminaries have been taken. Detailed proposals for the requisite staff have been submitted to Government and six stipendiaries have been sent to the Cawnpore Agricultural School for a two years' course. The greatest care has been exercised in the selection of candidates for the post of agricultural assistant, it being recognised that it is imperative that they should be of good agricultural stock.

The Veterinary College and Veterinary Department.

41. The Veterinary Department is outside the scope of this report, but it is an essential part of the Agricultural Department. It will not be out of place to mention that the Punjab Veterinary College buildings are being enlarged and improved, and that a hostel is being built to accommodate 250 students. In the Civil Veterinary Department the scheme includes the establishment of a bull-breeding farm at Sargodha for the North Punjab; the regular supply of bulls to districts; an increase in the staff and the better equipment of dispensaries and Veterinary Assistants.

The Lyallpur Experimental Farm.

42. The Lyallpur Experimental Farm was extended to three squares or 81 acres in the year under report. Arrangements are being made to bring three more squares under management in the current year, to increase the area still further to 300 acres in 1906-07, and to finally extend to 500 acres. Seed farming will be undertaken on a considerable scale. A large seed godown has been sanctioned and is under construction. The farm buildings are also being enlarged to provide the requisite additional accommodation for labourers and bullocks. The establishment has been strengthened by the appointment of a clerk.

The Sargodha Seed Farm.

43. The following brief account of the Sargodha Seed Farm is from materials kindly supplied by the Colonisation Officer. The establishment of the farm was sanctioned in October 1904, Rs. 5,000 being placed at the disposal of the Colonisation Officer to meet initial charges and to provide the necessary buildings. Buildings have been erected and include three seed godowns; a shed for sifting and cleaning produce; a suitable house for the manager; a small abadi for tenants and a cattle enclosure. Culverts have been placed over watercourses wherever required, and a hedge has been planted. A total area of 22 squares or 616 acres has been taken up, the soil being of a fair quality, varying from a medium to a light loam. The entire area is commanded, but suffers somewhat from being at the very tail of a long canal distributary.

The Kharif, 1904.

44. A beginning was made with 8 squares in the kharif of 1904 in anticipation of sanction. Fifty-nine acres were sown with indigenous cotton and 72 maunds of excellent seed were obtained. Thirty-one maunds have been resown on the farm and 41 maunds sold to two colonists at market rates on the understanding that they will place their best seed at the disposal of the Colonisation Officer if required. Fifty-one killas of cotton were sold standing for Rs. 2,555, as considerable difficulty was experienced in procuring labour for pickings. Four killas were placed under long stapled American cotton with excellent results on the virgin soil of the colony, outturns of $12\frac{1}{2}$ and $13\frac{2}{5}$ maunds being obtained with *Punjab Narma* and *Cawnpore Acclimatised*, respectively. Egyptian and Bombay varieties proved failures.

The Rabi, 1905.

45. Wheat was sown on 47½ killas in the rabi. The results with the three varieties tried were as follows:—

Name of variety.	Area in acres.	Outturns per acre in maunds.	
		Wheat.	Straw.
Lyallpur soft white bearded	22¾	11	13¼
Ghoni	5½	13½	26
Khushabi	24¼	7¾	9½

As sowings were rather late the crop resisted the severe winter frosts successfully, and the outturn was on the whole of very good quality, except with *Khushabi*, which was unavoidably sown very late. Three hundred and thirteen maunds of fine wheat were collected.

Financial results.

46. The entire area, with the exception of one square, is cultivated by tenants on produce rents. The tenants' share of the produce is liable to be purchased for the farm. This system is far more economical than direct farming, and it has been decided to give it a thorough trial. The receipts during the year, allowing for the share due to tenants, amount to Rs. 1,381-1-6, the expenditure being Rs. 5,000 almost entirely on buildings. Both harvests were revenue free.

General remarks.

47. The difficulties of management have been considerable. A suitable manager was only appointed in January, and up to that month the whole burden fell on the Colonisation Officer, assisted to some extent by M. Ijaz Hussain, Agricultural Assistant. The progress made in the first year is, I consider, highly satisfactory. I venture to suggest that the thanks of Government are due to Mr. Hailey. I visited the farm in November and April, and on the second occasion prescribed a system of accounts and registers.

Operations with American cotton in 1904.

48. The operations undertaken with American cotton in 1904 were described in paragraph 39 of last year's report, and the final results have been made the subject of a detailed report in my No. 1213, dated the 31st March 1905, to the Senior Secretary to the Financial Commissioner. Taking acclimatised varieties, seven plots out of 18 gave small outturns of four maunds and less, but these apparent failures were attributable to bad germination due to too deep sowing and to insufficient or irregular irrigation. Taking the rest, which were probably average plots, *Dharwar* did best with outturns of 5 to 6 maunds per acre, and *Narma* and *Cawnpore* came next in the order given. The Sargodha Farm showed outturns of over 12 and 13 maunds of uncleaned cotton with *Punjab Narma* and *Cawnpore Acclimatised*, respectively. This was due, in some measure, to the virgin soil. There were further good results with *Dharwar* and *Punjab Narma* at Lyallpur. Outside the Lyallpur Farm the returns excluded the first two and last two pickings as only the best of the produce was retained for this year's sowings. Mr. Fagan obtained outturns of 9 maunds and 8½ maunds with *Punjab Narma* and *Cawnpore Acclimatised* on small manured plots in the Hoshiarpur District Board garden, and Messrs. Mela Ram of Lahore report that their tenants in the Lahore Tahsil sowed *Punjab Narma* on 7 acres with yields of 6 maunds per acre. The recorded results were generally in support of the view that the yield of acclimatised American is equal to that of good indigenous varieties. The percentage of lint is less, being 30 per cent. compared with 32 to 34 per cent., but it would command a higher price. Messrs. Tata's opinion on average samples tested by them on December 15th was as follows:—

	Value per kandy of American cotton.	Counts for which suitable.
	Rs.	
Upland Georgian	240	30's to 40's
Dharwar	245	ditto
Cawnpore Acclimatised	225	20's to 24's
Punjab Narma	220	good for 20's

The price of average Bengals was then Rs. 185 to 187 per kandy. The cleaned cotton of last year's crop was bought by Messrs. Mela Ram at a price some 30 per cent. above that of Bengals, after they had spun it into 40's. In newly imported varieties *Upland Georgian* made an encouraging start.

Egyptian, Bombay and other cottons.

49. Egyptian and Bombay cottons were practically a complete failure. The latter probably find the drier climate and cold autumn absolutely uncongenial. The former are being cultivated this year in accordance with the methods practised in Egypt, and it remains to be seen whether last year's short outturn was due to mistakes in treatment. Smyrna and Assam cottons were imported in the spring for trial during the current season. Some tree cottons were also obtained from Messrs. Shaw, Wallace and Co. (Bengal varieties) and from Queensland (Dr. Thomatis' *Caravonica* cotton).

Selection and distribution of seed of good indigenous cotton.

50. The steps taken in the Gurgaon, Hissar, Lahore, Lyallpur and Dera Ghazi Khan Districts towards the selection and distribution of seed of good indigenous varieties of cotton have also been made the subject of a separate report, my No. 3630, dated the 16th September 1905, to the Senior Secretary to the Financial Commissioner. The policy adopted was to make a thorough selection in the first year subordinating quantity entirely to quality and employing only those men who were willing to take trouble in the matter. A good start was made in Lyallpur, Hissar and Dera Ghazi Khan. The varieties chosen for selection were in all cases those which showed the highest percentage of lint to seed. Fineness and length of staple are regarded as of secondary importance. Enquiry has shown that selection is already practised by good cultivators in the districts in which this experiment is being tried.

Extensive failure of the cotton crop in 1905.

51. It is greatly to be regretted that the season of 1905 has proved disastrous to cotton of all kinds, indigenous as well as imported. There has been a failure in the Central Punjab entirely without precedent in its completeness; and in other tracts also outturns are much below the average. The causes of this calamity are under investigation. They appear to be boll-worm, *tela* (green fly) and drought. It is fortunate for our operations that American cotton has shown a certain degree of immunity in the Jhelum Colony, a six-anna crop having been obtained.

Wheat.

52. The wheat variety experiments at the Lyallpur Farm with a view to the issue of seed have reached a stage where we grow a certain number of wheats which can be recommended. The season of 1905 was, however, extremely disappointing. The severe frosts of January and February impaired the quality of the grain, and there is only enough good seed for the requirements of the enlarged area of the farm. The manurial experiment was a failure, as the plots were so advanced when the very cold weather set in that they suffered much more than the unmanured plots. The wheat classification experiment was continued. A hydraulic experiment with wheat was inaugurated as a part of a wide series of experiments which are being undertaken by the Irrigation Department. The objects are to determine the most economical number of waterings and the most economical quantity of water required at each watering. The results were inconclusive, as the winter rainfall was ample and well distributed.

Miscellaneous experiments on the Lyallpur farm.

53. The other experiments on the farm may be disposed of in a few words. Outturns of barley and gram were unaffected by the frost. Gram flowered again, and late-sown barley gave a heavier yield than in previous years. Maize and sugarcane suffered severely from the absence of rain in September and October 1904. A reaping machine, imported from England at a cost of Rs. 300 delivered at Lyallpur, worked well and cut at the rate of an acre in 40 minutes. Drawbacks attending its use are a certain loss of *bhusa* and a waste of about half a maund of grain per acre, but with the dearness of labour which prevails in the colony, it is probable that a reaper used to its utmost capacity would very nearly pay its cost in a year. A second reaper has been placed on the Sargodha Seed Farm, and I am informed that a machine is being imported for trial by R. B. Ganga Ram, a large grantee in the Chenab Colony. It will, however, be some time

before the ordinary colonist overcomes his reluctance to purchase any expensive implements or any machine which it may be difficult to repair. There was no mishap this year, and perhaps some confidence will be created if we are equally fortunate in 1906.

Entomological research.

54. Lala Vishwa Nath Sahai, the Assistant for entomological work, was allowed to proceed to Pusa for a month in April. He took down his collection of insects for identification and received valuable supplementary training. Mr. Lefroy, the Entomologist to the Government of India, was able to speak highly of the quality of his work, and, at his suggestion, Vishwa Nath was deputed to a purely agricultural centre for six months, where he has had better opportunities of studying the pests which attack field crops. Bangah in the Jullundur District was selected for this purpose. Special local investigations have also been made by him at Sargodha and Lyallpur. Mr. Lefroy has himself visited the Province and made extensive enquiries in connection with the failure of the cotton crop. His report will be awaited with interest. Mr. Lefroy very kindly sent an Assistant to Rewari in October to help in the destruction of some locusts which had appeared in the Gurgaon District.

Mycological research.

55. Specimens of cotton plants affected by root rot were sent from Lyallpur and Dera Ghazi Khan to Dr. Butler, Mycologist to the Government of India, for examination. He has reported that they were attacked by a wilt disease which may be of a very serious nature. The disease is fairly common in the Punjab, although it does not cause much loss at present, except perhaps in Dera Ghazi Khan, where it is known locally as *mula*. The remedy is to burn the affected plants, and to sow other crops in the fields where the disease has appeared.

Agaves.

56. Five samples of fibre, prepared under the directions of Major Braide, I.M.S., Superintendent, Central Jail, from five varieties of agave grown in the Agri-Horticultural Gardens, Lahore, were sent to the Reporter on Economic Products for evaluation, with the following results :—

	Amount of fibre per 100 maunds of leaf.		Estimated value of fibre per maund.	
	Maunds.	Seers.	From	To
			Rs. a. p.	Rs. a. p.
Agave Vivipara	1	35	5 8 0	6 0 0
A. Americana	1	22	9 0 0	10 0 0
A. Rigida	2 chataks from 50 leaves.		10 0 0	10 8 0
A. Rigida var. sisalana...	3	11	6 0 0	...
A. Americana (narrow leaved)	1	33	5 8 0	6 0 0

Experimental plots were planted by Captain O'Brien at Mianwali with *Americana vivipara* and sisal varieties. Some of these varieties thrive in the Eastern and Northern Punjab, and will, I hope, receive the attention of the Agricultural Department.

Chrome leather.

57. It is claimed for chrome leather that it is non-absorbent and that it does not crack when it dries like leather produced with tannin, but remains soft and flexible. As it is particularly recommended for well water buckets or *charsas*, sufficient leather for *charsas* was given free to selected agriculturists in the Karnal, Jullundur and Hoshiarpur Districts, who were informed of the price and asked to report by next April on the merits of the leather. The initial cost is high, but it is asserted that the leather is much more durable. I regret that information received from Jullundur and Hoshiarpur is to the effect that the leather has proved a failure.

58. A Baldeo water-lift for raising water from tanks and watercourses where the lift does not exceed four or five feet, was sent for trial to the Deputy Commissioner of Hoshiarpur. It has created a favourable impression, but this kind of irrigation is rare in the Punjab compared with the United Provinces.

Baldeo water-lift.

59. The Deputy Commissioner of Dera Ghazi Khan states that Mekran dates are being tried in his district. It is reported from Hoshiarpur that most marked progress is being made by the zemindars in the planting of *khas* grass, &c., as a preventive of injury to land from the influx of sand due to the action of *chos*. Last year 196 maunds of *basmatti* rice seed were imported by the Deputy Commissioner of Montgomery, and the resultant crop was a good one. The seed is, however, said to have deteriorated. I regret that no report has been received from Mianwali on the working of the aeromotor supplied for experiment. I however hope to visit the district in the course of the winter. Produce shows were again held with encouraging results at Ferozepore and Lyallpur. Small experiments with nitragin, kindly supplied by the United States Department of Agriculture, are being conducted at Lyallpur and in the Karnal District.

Miscellaneous.

60. Four thousand seven hundred young English fruit trees were distributed free from the Mahasu Gardens to owners of orchards in the Punjab and the N.-W. F. Province, in the proportion of 3,136 to the former and 1,564 to the latter. Reports furnished by a few recipients of trees in previous years in Kulu, Dalhousie and Simla show that they do well if properly treated and cared for.

Distribution of young English fruit trees from the Mahasu Orchards during 1905.

61. The number of rain-registering stations was 188, the same as last year. There was, however, an interruption in the record maintained at Dharmsala from the 4th April to the 10th July 1905, owing to the damage done by the earthquake of the 4th April 1905. During the year Commissioners inspected 15 stations, Deputy Commissioners 45, Assistant and Extra Assistant Commissioners 6, and the Director of Land Records and his Personal Assistant 22. Rain-gauges were reported to be in good order, records properly and neatly kept, and the method of measuring understood by the officials concerned.

Meteorology.

62. The Reporter on Economic Products to the Government of India during the year under report added under the letter S to his programme of collection of products for the Indian Museum, Calcutta, and the Imperial Institute, London. Altogether, more than 50 specimens, comprising seed, oil, gum, roots, flowers, animal products (musk), botanical specimens, &c., were collected locally by this department or through District or Forest Officers, and forwarded to the Reporter with brief notes on their medicinal properties or the uses to which they are put locally.

Collections for the Reporter on Economic Products.

63. Fair progress has been made in ledgering agricultural information and the leger files have repeatedly afforded valuable aid.

Ledgering of agricultural information.

CHAPTER V.—Agricultural Education and the Publication of Agricultural Information.

64. The year has witnessed a marked increase in the number of village primary schools and also their conversion into the new "rural" type in most districts. Great attention has been directed by the Educational Department to the teaching of object lessons. An improvement in this respect is recognised by many Deputy Commissioners. It would probably not be claimed that a high standard has been reached as yet; but, allowing for the many difficulties which are encountered, satisfactory progress has been made. As remarked last year, much higher intelligence is required for teaching of this kind than is usually forthcoming. In connection with agricultural object lessons it has

Agricultural education.

already been stated in para. 38 that it is intended to train teachers for normal schools, and itinerating district inspectors at the Lyallpur Agricultural College. These men will in turn train the candidates for masterships in rural schools, or supervise the village teachers. It will naturally be many years before this scheme is in operation, but, in the meantime, I understand that the Education Department are adding small practical farms to their normal schools and doing all in their power to impart some knowledge of practical agriculture to the town-bred men who are sent out as village schoolmasters. It cannot be said that primary education is popular among agriculturists. The general attitude is one of deliberate indifference or even of absolute opposition, on the ground that education instils ideas which unfit a boy for work in the field. The attendance of agriculturists shows a slight increase, but it would perhaps be a sanguine view to expect any rapid advance in the immediate future. The education at rural primary schools is suitable for the education of boys designed for patwaris if they pass the Middle Standard. But a patwari who has studied no further will probably find himself handicapped in the competition for kánúngoships.

Agricultural information.

65. A translation of the manual on the diagnosis and treatment of the more common forms of cattle disease is in the Press. The book will be advertised by a free distribution of 200 copies in each district. Two short pamphletsi in vernacular are about to issue, containing instructions for the cultivation of acclimatised American cotton, and directions for the destruction of the boll-worm pest.

CHAPTER VI.—Miscellaneous.

District gardens.

66. The accounts for the year ending 31st March 1905 of the four gardens noticed annually in this report are as follows :—

					Income.			*Expenditure.*		
Shahdara—			Rs.		Rs.	a.	p.	Rs.	a.	p.
Receipts from the public			1,140							
Contribution from Government			1,680							
					2,820	0	0	1,987	7	6
Shalamar ...	...	...	...	...	3,806	9	9	2,741	12	0
Kudsia ...	...	...	...	...	1,332	0	0	5,190	0	0
Roshanara ...	...	...	...	...	2,728	0	0	5,197	0	0

LAHORE,
Dated the 29th December 1905.

W. C. RENOUF,
Director of Land Records and Agriculture, Punjab.

QUINQUENNIAL RETURN.

STATEMENT I.

TABLE SHOWING THE STATISTICS OF EXISTING PATWARI AND FIELD KANUNGO CIRCLES.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
District.	Number of field Kánúngos.	Number of Patwáris.	Area and Revenue (00's omitted). Area in acres. Total.	Area in acres. Cultivated.	Total assessment.	Number of fields.	Number of Khatauni holdings.	Average per Field Kanungo. Fields.	Khatauni holdings.	Average per Patwari. Fields.	Khatauni holdings.	Rate of Patwári Cess per cent. on Land Revenue.	Remarks.
					Rs.								
Hissár	15	306	33,151	26,139	7,716	435,579	273,807	29,039	18,254	1,423	895	4-11-0 to 6-4-0	Rs. 5-3-4 in four tahsils, Rs. 4-11-0 in Budhláda and Rs. 6-4-0 in Sirsa.
Rohtak	10	242	11,542	9,655	9,574	711,056	290,534	71,106	29,053	2,938	1,201	3-4-0 to 3-8-0	Rs. 3-8-0 in Sámpla and Jhajjar, Rs. 3-4-0 in Rohtak and Rs. 3-0-0 in Gohána.
Gurgáon	14	310	12,415	10,014	12,094	1,091,321	336,146	77,952	24,010	3,520	1,084	4-0-0	
Delhi	11	225	8,157	5,463	8,504	1,134,884	272,133	103,171	24,739	5,044	1,209	4-0-0	
Karnál	15	333	20,154	11,548	10,727	1,146,409	335,202	76,427	22,347	3,443	1,007	4-4-0 to 5-7-6	Rs. 4-4-0 in Karnál and Pánipat, Rs. 5-7-6 in Indri, Rs 5-6-8 in Thánesar, Rs. 4-11-0 in Kaithal and Rs. 5-6-8 in Pahowa.
Ambála	15	356	11,127	6,271	9,607	1,379,072	407,500	91,938	27,167	3,874	1,145	4-11-0	
Simla	1	8	490	100	175	48,111	9,489	48,111	9,489	6,014	1,186	(a) 6-4-0 to (b) 5-0-0	(a) In Simla and Kotgarh. (b) In Kotkhai.
Kángra	16	315	24,678	5,902	9,263	2,210,735	447,733	138,171	27,983	7,018	1,421	Rs. 3-2-0 to 5-3-4	
Hoshiárpur	20	461	14,304	7,296	14,296	2,945,644	801,527	147,282	40,076	6,390	1,739	(c) 4-4-0 to (d) 4-2-8	(c) In Una. (d) In other tahsils.
Jullundur	14	402	8,703	6,975	14,877	2,040,805	557,178	145,772	39,798	5,077	1,386	3-11-2	
Ludhiána	14	300	8,910	7,655	11,103	1,479,592	354,815	105,685	25,344	4,932	1,183	3-2-0	
Ferozepore	16	356	26,118	21,855	11,798	1,350,591	458,250	84,412	28,641	3,794	1,287	(e) 4-11-0 to (f) 6-7-4	(e) In Ferozepore, Moga, Zíra and Muktasar. (f) In Fazilka.
Montgomery	13	207	29,532	6,843	4,235	920,106	136,471	70,777	10,498	4,445	659	6-4-0	
Lahore	15	321	23,001	13,226	10,306	1,806,670	430,211	120,445	28,681	5,628	1,340	5-0-0	
Amritsar	11	305	9,977	7,886	12,605	1,426,676	544,632	129,698	49,512	4,678	1,786	4-11-0	
Gardáspur	17	426	11,675	8,510	15,383	1,578,049	615,865	92,826	36,227	3,704	1,446	4-11-0	
Siálkot	17	403	12,648	9,501	14,928	1,879,652	669,128	110,568	39,360	4,664	1,660	5-3-4	
Gujránwála, New Colony	17	317	19,046	11,544	10,713	1,172,679	313,955	68,981	18,468	3,699	990	5-3-4 to 7-8-0	
Gujrát	10	232	12,319	8,435	8,423	1,114,517	418,012	111,452	41,801	4,804	1,802	4-11-0	
Shahpur, Jhelum Colony	7	133	20,190	6,033	4,843	384,017	136,610	54,860	19,516	2,887	1,027	4-0-0	
Jhelum	11	207	17,713	7,484	7,575	1,437,638	367,827	130,694	33,439	6,945	1,777	6-4-0	
Ráwalpindi	9	183	13,091	6,004	5,448	971,433	353,247	107,937	39,250	5,308	1,930	4-11-0 to 6-4-0	Rs. 5-0-0 in Ráwalpindi, Rs. 6-4-0 in Kahuta and Murree and Rs. 4-11-0 in Gujar Khan.
Attock	8	186	26,966	10,332	5,894	740,054	308,633	92,507	38,579	3,979	1,659	§ 5-0-0 to *6-4-0	§ In Fatehjang. * In other Tahsils.
Miánwáli	11	176	49,771	7,423	4,441	703,658	211,284	63,969	19,208	3,998	1,200	5-0-0 to 6-4-0	Fixed Rs. 5-0-0 and fluctuating Rs. 6-4-0 in Leiah and Bhakkar; Rs. 5-0-0 in Isa Khel and Miánwáli.
Jhang, Chenáb Colony	27	441	43,318	18,214	14,165	2,634,087	219,673	97,559	8,136	5,973	498	{ 5-5-0 (x) { 7-8-0 (y)	(x) District. (y) Colony.
Multán	19	326	38,105	9,715	8,084	1,157,129	170,341	60,902	8,965	3,549	523	6-4-0	
Muzaffargarh	22	249	20,193	5,167	6,785	928,498	272,984	42,202	12 408	3,729	1,096	6-4-0	
Dera Gházi Khan	11	180	34,789	9,842	5,203	568,333	222,354	51,667	20,214	3,157	1,235	6-4-0	Pacca Rs. 5-0-0, Kacha Rs. 6-4-0.
Total	386	7,906	562,083	265,032	258,765	35,396,995	9,935,541	91,702	25,740	4,477	1,257	...	

NOTE.—This is a quinquennial statement. It was prepared for the Report for 1902-03.

STATEMENT II.—(See Chapter II).

STATEMENT SHOWING THE EDUCATIONAL QUALIFICATIONS OF PATWARIS AND PATWARI CANDIDATES AND PUNISHMENTS AND PROMOTIONS OF PATWARIS FOR THE YEAR ENDING 15th JUNE 1905.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	Patwaris and Assistant Patwaris.									Candidates.							
District.	Number.	Number who have passed: The Entrance or Higher Examination.	Number who have passed: The Middle School Examination.	Total of columns 3 and 4.	Percentage of column 5 on column 2.	Number who are agriculturists.	Number dismissed.	Number reduced, suspended, or fined.	Number promoted to Kánúngo-ships or other appointments.	Number.	Percentage of Column 11 on column 2.	Number who have passed: The Entrance or Higher Examination.	Number who have passed: The Middle School Examination.	Total of columns 13 and 14.	Number who are agriculturists.	Number who have passed the Patwári Examination.	Remarks.
1. Hissár	331	1	98	99	30	30	...	13	...	59	18	2	19	21	14	55	
2. Rohtak	242	4	90	94	39	96	5	74	3	119	49	3	73	76	70	59	
3. Gurgáon	329	5	159	164	50	77	17	196	1	121	37	3	78	81	49	53	
4. Delhi	225	...	77	77	34	68	1	17	4	93	41	...	93	93	40	44	
5. Karnál	353	3	107	110	31	98	7	256	3	304	86	21	226	247	89	107	
6. Ambála	381	8	156	164	43	95	3	26	3	113	29	6	88	94	49	63	
7. Simla	8	...	1	1	13	8	...	...	1	10	125	...	...	...	10	...	
8. Kángra	315	...	55	55	17	123	3	45	...	109	35	3	77	80	48	96	
9. Hoshiárpur	481	10	189	199	41	160	4	83	3	193	40	4	164	168	94	138	
10. Jullundur	418	6	135	141	33	100	7	82	1	86	21	5	77	82	34	76	
11. Ludhiána	307	3	152	155	50	74	3	30	1	71	23	3	57	60	28	54	
12. Ferozepore	379	3	114	117	31	109	2	33	...	95	25	6	69	75	28	48	
13. Montgomery	216	...	60	60	28	36	2	90	2	61	28	...	39	39	16	22	
14. Lahore	334	1	121	122	37	77	...	90	2	151	45	10	96	106	43	151	
15. Amritsar	325	4	134	138	42	69	4	139	3	81	25	4	68	72	19	64	
16. Gurdáspur	481	6	171	177	37	137	1	106	1	112	23	7	76	83	30	105	
17. Siálkot	420	10	95	105	25	100	3	132	...	176	42	13	139	152	70	73	
18. Gujránwála	314	6	85	91	29	44	5	166	9	118	38	7	65	72	30	74	
19. Gujrát	244	2	35	37	15	60	...	16	...	81	33	3	41	44	48	60	
20. Shahpur	146	1	35	36	25	30	...	85	1	98	67	6	37	43	57	53	
Jhelum Colony ...	152	...	63	63	41	28	3	6	1	45	30	1	23	24	16	29	
21. Jhelum	221	1	66	67	30	48	1	103	1	74	33	7	43	50	35	27	
22. Ráwalpindi	196	3	54	57	29	95	4	124	...	139	71	3	39	42	105	114	
23. Attock	214	1	58	59	28	64	2	34	4	88	41	1	28	29	50	41	
24 Miánwáli	182	2	62	64	35	39	2	23	3	127	70	8	51	59	55	112	
25. Lyallpur	379	15	275	290	77	112	2	311	4	131	35	8	112	120	42	93	
26. Jhang	195	3	76	79	41	45	1	...	2	194	99	15	114	129	90	116	
27. Multán	351	9	142	151	43	76	2	76	2	135	38	3	74	77	70	56	
28. Muzuffargarh ...	264	5	104	109	41	75	2	126	3	45	17	2	29	31	12	40	
29. Dera Gházi Khan ...	187	1	43	44	24	142	...	80	4	62	33	2	23	25	59	27	
Total ...	8,590	113	3,012	3,125	36	2,315	86	2,562	62	3,291	38	156	2,118	2,274	1,400	2,050	

STATEMENT III.—(See Chapter III).

STATEMENT SHOWING THE WORKING OF THE LAND RECORD AGENCY DURING THE YEAR ENDING JUNE 30TH, 1905.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
		Mutations.					Partitions.							Detailed Jama-bandis.			Number of Villages in which crop inspections were checked.			District Kanungo's work.				
District.	Number of villages.	Number pending from last year.	Number instituted.	Total for disposal.	Number attested.	Balance unattested at close of year.	Number pending from last year.	Number instituted.	Total for disposal.	Number decided.	Area in acres involved in decided cases.	Cultivated area in acres included in column 12.	Number of cases pending at close of year.	Number of villages for which prepared during the year.	Number of villages in which checked by Collector and his Assistants.	Number of detailed jamabandis filed by due date.	By Collector and his Assistants.	By Tahsildars.	By Naib Tahsildars.	Number of days spent on tour.	Number of villages tested.	Number of inspections of Tahsil Offices.	Number of trijunction pillars repaired during the year.	Remarks.
1. Hissár	1,008	2,013	17,000	19,013	17,291	1,722	133	281	414	317	45,225	24,108	97	265	86	265	240	269	615	129	211	10	2	
2. Rohtak	514	3,076	24,857	27,933	26,532	1,401	61	182	243	198	4,493	3,775	45	132	82	127	768	261	339	164	233	8	710	
3. Gurgáon	1,263	6,010	66,041	72,051	60 576	11,475	103	237	340	256	20,224	19,231	84	317	...	111	150	819	1,311	...	...	...	1,111	
4. Delhi	823	1,295	18,913	20,208	17,587	2,621	62	144	206	133	8,930	5,451	73	204	65	204	314	236	260	181	819	6	...	
5. Karnál	1,436	3,186	19,771	22,957	19,796	3,161	87	239	326	170	10,975	6,712	156	1,436	199	1,436	129	277	742	117	211	4	258	
6. Ambála	1,795	3,543	31,155	34,698	28,808	5,890	102	226	328	241	6,008	*	87	444	131	444	19	281	489	123	279	7	70	* Figures not available.
7. Simla	21	69	1,083	1,152	1,005	147	6	2	8	7	69	24	1	6	...	6	...	...	10	93	18	...	...	
8. Kángra	718	1,558	32,024	33,582	30,492	3,090	207	404	611	503	2,326	1,356	108	...	...	...	21	262	232	84	4	5	40	
9. Hoshiárpur	2,180	6,344	42,075	48,419	43,087	5,332	130	350	480	259	5,341	2,285	221	546	18	546	178	467	434	216	359	8	276	
10. Jullundur	1,313	521	43,858	44,379	42,311	2,068	102	275	377	276	7,973	6,234	101	313	52	313	1,071	646	538	230	408	9	515	
11. Ludhiána	905	1,446	26,027	27,473	26,427	1,046	70	167	237	205	898	744	32	254	254	254	135	349	594	209	720	6	66	
12. Ferozepore	1,621	7,004	38,235	45,239	40,585	4,654	177	333	510	385	65,229	47,735	125	408	86	403	616	539	669	178	460	10	2	
13. Montgomery ...	1,408	330	3,491	3,821	3,246	575	34	85	119	82	30,554	16,720	37	310	12	260	82	550	573	113	402	8	...	
14. Lahore	1,637	1,922	21,903	23,825	21,704	2,121	129	119	248	166	3,381	2,540	82	373	32	371	365	643	711	93	100	3	5	
15. Amritsar	1,075	2,080	32,493	34,573	29,008	5,565	113	318	431	292	11,308	8,692	139	262	31	259	178	410	485	124	285	7	16	
16. Gurdáspur	2,365	1,587	31,813	33,400	29,703	3,697	77	207	284	209	6,870	4,177	75	629	55	629	480	1,160	1,107	102	124	8	3	
17. Siálkot	2,524	1,981	33,430	35,411	33,739	1,672	85	184	269	181	3,009	(a)	88	648	42	638	150	436	442	149	657	9	...	(a). Not available in the Court register.
18. Gujránwála ...	1,259	2,440	10,967	13,407	11,637	1,770	37	705	742	253	14,071	7,257	489	206	188	188	159	240	256	100	263	8	...	
19. Gujrát	1,431	2,423	27,703	30,126	26,605	3,521	196	179	375	266	8,976	6,536	109	464	65	464	71	336	408	147	372	22	...	
20. Shahpur	528	371	7,366	7,737	7,148	589	57	82	139	85	2,125	1,422	54	103	3	102	267	191	248	152	232	6	...	
Jhelum Colony ...	581	441	4,844	5,285	4,713	572	273	247	520	175	52,839	15,636	345	1	...	1	8	132	314	...	...	...	...	
21. Jhelum	955	3,757	18,301	22,058	18,352	3,705	80	305	385	234	6,473	4,076	151	265	17	265	30	262	222	110	230	6	9	
22. Ráwalpindi	1,167	8,869	75,290	84,159	75,480	8,679	446	382	828	433	1,084	630	395	...	...	...	120	252	776	...	...	...	...	
23. Attock	622	2,408	23,436	25,844	23,209	2,635	208	311	519	249	17,179	3,645	270	70	2	70	35	311	440	...	...	3	...	
24. Miánwáli	451	2,434	18,708	21,142	17,837	3,305	150	179	329	131	32,157	25,021	198	89	24	89	91	242	327	104	60	5	...	
25. Lyallpur	1,465	1,990	7,013	9,003	7,417	1,586	9	33	42	23	2,695	2,311	19	361	143	355	136	210	552	...	...	1	868	
26. Jhang	799	2,029	4,085	6,114	5,221	893	290	401	691	437	41,714	9,273	254	214	160	214	255	202	799	42	38	...	1,012	
27. Multán	1,449	420	8,984	9,404	8,841	563	65	334	399	279	13,976	4,470	120	360	...	360	414	368	1,049	120	34	10	45	
28. Muzaffargarh ...	769	1,097	9,702	10,799	9,116	1,683	153	357	510	268	12,148	5,361	242	188	51	188	373	413	1,142	99	204	6	...	
29. Dera Gházi Khan ...	794	2,874	14,128	17,002	13,609	3,393	98	310	408	264	23,094	10,728	144	190	...	190	...	329	490	211	599	8	573	
Total ...	34,876	75,518	714,696	790,214	701,083	89.131	3,740	7,578	11,318	6,977	461,314	246,150	4,341	9,058	1,798	8,752	6,855	11,084	16,565	3,390	7,322	183	5,581	

STATEMENT IV.—(See Chapter II.)

ANNUAL ABSTRACT OF INCOME AND EXPENDITURE OF THE PATWAR FUND FOR THE YEAR ENDING 30th SEPTEMBER 1905.

1	2	3	4	5	6	7	8	9
District.	Balance in hand at beginning of year.	Demand.	Total receipts.	Expenditure on salaries of patwáris.	Contribution to Kánúngo Establishment.	Other charges.	Total expenditure.	Closing balance.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1. Hissár	29,233	61,741	66,719	48,928	...	1,972	50,900	45,052
2. Rohtak	88,808	43,048	49,076	34,974	...	1,815	36,789	21,095
3. Gurgáon	16,204	48,587	52,856	41,932	...	25,588	67,520	1,540
4. Delhi	12,299	43,328	41,304	32,954	...	906	33,860	19,743
5. Karnál...	36,222	64,770	62,200	48,676	...	7,956	56,632	41,790
6. Ambála	14,863	54,318	54,761	51,080	...	2,503	53,583	16,041
7. Simla	588	991	999	1,031	...	144	1,175	412
8. Kángra	43,612	48,163	43,094	41,947	10,000	2,859	54,806	31,900
9. Hoshiárpur	28,986	59,945	61,175	62,396	...	3,887	66,283	23,878
10. Jullundur	20,908	57,523	57,486	54,879	...	2,014	56,893	21,501
11. Ludhiána	20,225	37,828	37,791	36,662	...	2,845	39,507	18,509
12. Ferozepore	28,608	62,744	62,591	54,190	...	2,901	57,091	34,108
13. Montgomery	27,549	28,044	26,741	27,046	...	3,851	30,897	23,393
14. Lahore	(a) 34,396	57,086	53,903	45,367	...	2,509	47,876	40,423
15. Amritsar	89,127	60,312	60,100	45,873	35,000 By transfer 15,000	747 15,000	81,620	52,607
16. Gurdáspur	33,758	76,533	73,056	64,844	...	2,180	67,024	39,790
17. Siálkot	64,193	81,549	78,014	58,276	20,000	3,015	81,291	60,916
18. Gujránwála	(a) 72,758	66,107	64,508	37,083	22,504	9,079	68,666	68,600
19. Gujrát	17,413	39,797	38,298	34,717	...	2,831	37,548	18,163
20. Shahpur	8,638	21,150	19,016	18,673	...	1,960	20,633	7,021
Jhelum Colony	(a) 2,971	2,013	26,933	14,434	...	4,533	18,967	10,937
21. Jhelum	59,406	47,797	48,832	29,561	10,000	2,921	42,482	65,756
22. Ráwalpindi	— 3,576	27,893 By transfer	34,820 15,000	27,362	...	6,695	34,057	12,187
23. Attock	10,886	35,450	39,613	27,491	...	4,293	31,784	18,715
24. Miánwáli	11,678	26,789	25,947	23,015	...	4,343	27,358	10,267
25. Chenáb Colony	(a) 1,84,723	1,71,333	1,70,051	46,274	3,398	47,254	96,926	2,57,848
26. Jhang	299	27,980	25,206	27,809	...	6,481	34,290	— 8,785
27. Multán	82,904	74,734	74,289	47,632	20,000	2,323	69,955	87,238
28. Muzaffargarh	37,047	43,590	43,590	37,411	...	2,580	39,991	40,646
29. Dera Ghási Khan	42,615	33,307	38,551	25,621	10,000	1,838	37,459	43,707
Total	10,37,341	15,04,450	15,46,520	11,48,138	1,30,902	1,79,823	14,58,863	11,24,998

(a) Last year's figures have been corrected.

PUNJAB LAND RECORD DEPARTMENT REPORT FOR 1906.

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REPORT

ON THE

OPERATIONS OF THE DEPARTMENT

OF

LAND RECORDS,

PUNJAB.

For the year ending the 30th September, 1906.

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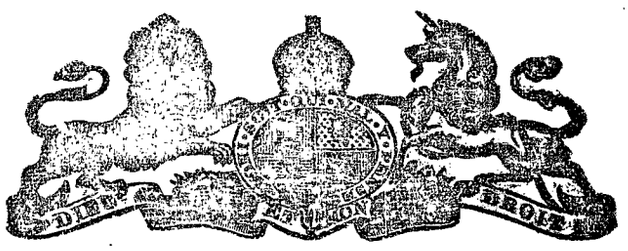

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No. 3451.

FROM

L. FRENCH, ESQUIRE, M.A., C.S.,
Director of Land Records, Punjab,

To

L. H. LESLIE JONES, ESQUIRE, C.S.,
Senior Secretary to Financial Commissioner, Punjab.

Dated LAHORE, *the 24th December* 1906.

SIR,

I have the honour to submit the Annual Report of the Department of Land Records, Punjab, for the year ending 30th September 1906.

I have the honour to be,
Sir,
Your most obedient servant,
L. FRENCH,
Director of Land Records, Punjab.

[Number of pages fixed as maximum limit of the Text, 10].

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No. 47 (Revenue—Revenue).

FROM

A. B. KETTLEWELL, ESQUIRE,

Offg. Chief Secretary to Government,

Punjab and its Dependencies,

To

THE SENIOR SECRETARY TO THE FINANCIAL COMMISSIONER, PUNJAB.

Dated Lahore, 13th February 1907.

Revenue and Agriculture.

Revenue.

SIR,

I AM directed to acknowledge the receipt of your letter No. 36, dated 16th January 1907, which gave cover to the report of the Director of Land Records on the operations of his department for the year ending 30th September 1906.

2. The report discloses few features of special interest, and apart from the matters alluded to in this paragraph, the year under report was comparatively uneventful. It was, however, marked by two administrative changes of importance, the separation of the Department of Land Records from that of Agriculture, and the abolition of the patwar cess. The separation of the two departments is doubtless a step of considerable moment. The combined charge had, in view of the growing importance of agricultural and veterinary questions, become too large for a single officer, and their separation will certainly work in the direction of efficiency. The abolition of the patwar cess constituted an appreciable relief to the agricultural community, and will, it is anticipated, do little towards dislocating the efficiency of a system which had been in work for some years. The details of the reorganization necessitated by the change hardly call for notice in a review.

3. As the Financial Commissioner points out, the Director's report contains much matter which should properly have formed the subject of separate official references.

4. The investigations of the Director regarding the sufficiency of tahsil establishments are, it is noted, nearing completion. It is observed that the Financial Commissioner is unable to finance the scheme in its entirety from the grant already placed at his disposal, but when the whole of the Director's proposals have reached Government, there will probably be no difficulty in providing the necessary establishments.

5. A large number of patwari schools were open during the year under report, and it is satisfactory to observe that the educational qualifications of patwaris are gradually being increased. At the same time it must be borne in mind that the educational is not the only test that must be applied. Apart from the experience of the Deputy Commissioner of Montgomery, who admits that he is unable to restrict his list of candidates to men who have passed the recognized examination, the remarks about the attitude of the agricultural population in Sialkot towards the subordinate revenue staff indicate

clearly that, in spite of the improvement effected in the pay and prospects of the agency their success depends upon a thorough understanding of and a true sympathy with the needs of the agriculturist class. Sir Charles Rivaz is inclined to agree with the opinion expressed by the Deputy Commissioner of Jullundur that the policy of selecting highly educated patwaris, unless they belong to the zamindar class, may be very possibly overdone. On the whole, however, the existing agency appears to have been satisfactory, and if the prospects of patwaris can, as it is hoped, be improved in the near future, there should, His Honour thinks, be no difficulty in improving the standard of efficiency. The questions raised in paragraph 10 of the report have been referred to the Government of India, but pending the receipt of their orders, His Honour is entirely of opinion that the possibility of enhanced gratuities on retirement should not be allowed to militate against efficiency, and that sentimental considerations should not be permitted to weigh against the desirability of getting rid at the earliest possible opportunity of patwaris who are no longer capable of turning out satisfactory work.

6. As regards kanungos, the Lieutenant-Governor is inclined to attach considerable importance to the desirability of restricting appointments to the kanungo status of men who have not had the benefit of a grounding as patwari. His Honour is glad to learn that the Director is on the whole satisfied with the standard of kanungos' work, but would be glad if the special attention of district officers might be drawn to the necessity of insisting that kanungos should perform strictly the duties assigned them by Land Revenue rules 62 and 126.

7. The adequacy of the record-room establishment has been under the consideration of Government during the year, and the additions promised to the district kanungo staff will, it is anticipated, prove a welcome relief to district offices.

8. Mr. Renouf and Mr. French have discharged their duties as Director with energy and ability.

I have, &c.,

A. B. KETTLEWELL,

Offg. Chief Secretary to Government, Punjab.

Punjab Government Press, Lahore—14-2-07—383—434—K. C. M.

No. 36.

FINANCIAL COMMISSIONER'S OFFICE:

Dated LAHORE, 16*th January*, 1907.

FROM

L. H. LESLIE JONES, ESQUIRE,

Senior Secretary to Financial Commissioner, Punjab,

To

A. B. KETTLEWELL, ESQUIRE,

Chief Secretary to Government, Punjab.

SIR,

I am directed to forward a copy of a letter No. 3451, dated 24th December 1906, from the Director of Land Records enclosing his Annual Departmental Report. The report was due in this office on the 15th December, but was actually received on the 4th January, while the Financial Commissioner's review is due to reach Government on the 15th January. The Director of Land Records has given no explanation of his delay, which should not be allowed to occur again. As regards the contents of the report I am to make the following remarks.

2. This is the first separate report of the Department of Land Records since the constitution of a Department of Agriculture. The Director of Land Records is now, however, also Inspector-General of Registration, Registrar of Joint-Stock Companies and Secretary to the Financial Commissioner for subjects relating to Commerce and Industry. He has since the close of the year under report been granted the services of a second Personal Assistant. The most important feature of the year under review was the abolition of the patwar cess with effect from the 1st April 1906.

3. The inquiry referred to in paragraph 3 of the Director's report was undertaken in accordance with the instructions contained in Punjab Government letter No. 77-A., dated the 4th March 1902. All the recommendations for increase of establishment that have been dealt with so far were based on local investigations made by the Director personally, and the extra expenditure was met out of the special grant of Rs. 20,000 placed at the disposal of the Financial Commissioner for strengthening ministerial establishments in subordinate revenue offices. It has been reported to Government that the whole of this special grant has been allotted, and all applications for increases of establishment are now being submitted to Government for sanction and provision of funds. It has been ascertained from the Director that a further expenditure of about Rs. 4,000 per annum will be necessary to meet the requirements of the tahsils for which extra establishment has not been already sanctioned.

4. The standard of education amongst patwaris has slightly risen; as also has that of candidates though in a greater degree. The proportion of patwaris who are agriculturists has increased a little, but there is a falling off in this respect in the case of patwari candidates, the percentage being now 40 as against 43 last year. No explanation of this fact is given, but, assuming that agriculturists are generally willing to take patwari appointments, it is difficult to suppose that there can be any reason other than want of care in the selection of candidates. The attention of Deputy Commissioners will again be drawn to the importance of securing agriculturists as patwaris. The question whether patwari candidates who fail in one subject should be re-examined in all is one which should have been reported separately.

5. Similarly the question (paragraph 5 of the report) whether the pay of patwaris should be raised in Jullundur is beyond the scope of this review; but it may be remarked that, if the Jullundur patwaris confine themselves to compensation for the inferiority of their pay to that given in neighbouring districts, their customary demands will have reached a very satisfactory degree of moderation.

6. The relations between patwaris and zamindars in Sialkot are very unsatisfactory, but it is difficult to suppose that, unless the control over them is really inefficient, the conduct of patwaris in that district is worse than elsewhere, while it is impossible to draw from the results of the inquiries any other conclusion than that the complaints were generally unfounded.

7. It has already been decided that the services of the patwari agency should not be made pensionable. No orders have yet been received on the proposals made by the Financial Commissioner that the retiring gratuities of patwaris should be increased, and that the services of patwaris as such should count for pension if they are promoted to pensionable posts. It is obviously wrong inefficient patwaris should meanwhile be allowed to remain on in Government service in the hope that, if they retire at a later date, they will obtain gratuities on a larger scale.

8. The matter discussed in paragraph 12 of the Director of Land Records' Report should be reported separately, and the Financial Commissioner will not notice it here.

To the remarks made in paragraph 13 of the report it may be added that, for the income formerly realised from the patwar cess, the Government of India have sanctioned a compensatory recurring assignment of Rs. 15,64,000 per annum, a sum which represented the estimated income from the fund as shown in the budget for 1906-07. Any growth in expenditure is to be met from the growth of provincial revenues. The proposals to which the Director of Land Records refers in the same paragraph have not yet reached the Financial Commissioner. The total expenditure for the year under report amounted to Rs. 13,55,033 as against Rs. 14,58,863 reported in the previous year. The difference is not explained, but it seems to be due to the abolition of contributions to (1) the kanungo agency and (2) the Irrigation Department (in the case of the Chenab and Jhelum Colonies), which followed the abolition of the cess.

9. The Deputy Commissioners of the districts referred to in paragraph 15 of the report should reduce the number of their kanungo, and particularly of the non-patwari candidates to a reasonable scale, the action taken being reported by the Director of Land Records. Of the six cases of improper selection of candidates mentioned in paragraph 4 of last year's review, one is accounted for by a clerical error, two candidates were removed and three accepted by the Financial Commissioner for special reasons.

10. The Financial Commissioner has nothing to add to the remarks made in paragraph 18 of the report. The case is at present under his consideration.

11. The number of mutation cases decided is greater than last year, but the pending file is also rather larger. The facts referred to in paragraph 23 of the report, regarding the extra Naib Tahsildar, who recorded a large number of incorrect mutation orders are not stated with sufficient detail to enable the Financial Commissioner to make any comment upon them. The Naib Tahsildar may have had revenue experience but have been incompetent. In any case the suggested rule is a matter which should have been referred separately, and the Financial Commissioner will not deal with it further here.

12. The pending file of partition cases is higher than that reported last year, though disposals have been more numerous. There appears to be an error in the mention of Rohtak and the Jhelum Colony in paragraph 25 of the report, as in both districts detailed jamabandis were filed, though in the latter they were not inspected by the Collector, *vide* the statistics in Statement III. On the other hand no detailed jamabandis were prepared in Rawalpindi, a district which the Director does not mention in this connection. In Simla only six jamabandis were prepared altogether, while Gujranwala and Karnal were under settlement.

13. The question whether changes should be made in the existing system of effecting mutations in the revenue records with the object both of improving their value as records of title, and of saving the landowners of the Province from the inconveniences attendant on the present concurrent requirements of the registration and revenue officers, has been referred by Government to the Financial Commissioner who has consulted selected officers on it. Their replies have not yet been received.

14. The report contains a number of suggestions, &c., which might more suitably have been made the subject of separate references. It should be remembered that suggestions on which the opinions of other officers are required cannot be finally dealt with in a review, and when that is the case it is better to omit them. Otherwise the report is a good one, and Mr. Gordon Walker has much pleasure in acknowledging the energy which Mr. French has bestowed on the conduct of the affairs of the Department during the period that he held charge of it.

I have, &c.,

L. H. LESLIE JONES,

Senior Secretary to Financial Commissioner, Punjab.

ANNUAL REPORT

OF THE

DEPARTMENT

OF

LAND RECORDS, PUNJAB.

For the year ending 30th September 1906.

BRANCH OF THE ROYAL ASIATIC SOCIETY

CHAPTER I.—Prefatory.

THE course of the year has witnessed some important changes in the constitution of the Department of Land Records. On July 1st a separate Department of Agriculture was created and placed in charge of Mr. Renouf who up to that date held the combined post of Director of Land Records and Agriculture.

Changes in the constitution of the old Department of Land Records and Agriculture.

I joined the office on special duty on February 7th and was entrusted with the Land Records Section, succeeding Mr. Renouf as Director of Land Records on July 1st. On the constitution of the Department of Agriculture the duties of Inspector-General of Registration and Registrar of Joint-Stock Companies were transferred from the Commissioner of Excise to the Director of Land Records who, in addition, has now to deal with subjects relating to Commerce and Industry, subject to the general control of the Financial Commissioner, Punjab. Shekh Fazal Karim remained as Personal Assistant until 1st December 1905, when he was succeeded by Malik Zaman Mehdi Khan, Extra Assistant Commissioner of Kangra. Subsequent to the close of the year under report the second Personal Assistant was sanctioned in order to allow the inspection work connected with Land Records, Registration, Trade Posts and Factories to be carried through without difficulty.

2. Mr. Renouf spent 94 days on tour but owing to the pre-occupation of organising the Agricultural Department was unable to make more than two inspections of tahsils. I spent 81 days on tour, inspecting 6 district and 25 tahsil offices, in Hissar, Delhi, Ambala, Ludhiana, Ferozepore, Montgomery, Lahore, Amritsar, Gurdaspur, Multan and Simla. The Personal Assistant spent 180 days on tour and apart from *girdawari* inspections visited 26 tahsils and district offices. The tours done by Mr. Renouf included visits to the United Provinces, Pusa, and Peshawar in connection with the Agricultural Section of the combined Department.

Touring.

3. Enquiries into the sufficiency of tahsil establishments were further pursued, and six more districts were finally disposed of. In connection with these enquiries 87 out of 115 tahsils in the Province have been personally visited by the Director and it should be possible to complete investigations by the end of the present cold weather. The system by which reports are made by complete districts has retarded the decision of some cases which have been pending a considerable time. Apparently the grant assigned to the Financial Commissioner will be insufficient to meet the requirements of the remaining districts on the scale allowed to those for which reinforcements have been already sanctioned. The most urgent demands are advanced usually in head-quarters tahsils where the absence of treasury accountants to whom much miscellaneous work in other tahsils can be entrusted makes itself severely felt.

Enquiries into the sufficiency of tahsil establishments.

4. In accordance with the new regulations one examination only was held for Naib Tahsildars, and this took place in August. From the Punjab 100, and from the North-West Frontier Province 17 candidates presented themselves.

Examination of Naib Tahsildar candidates.

The reduction of the number of examinations from two to one has been effected owing to the complaints that when candidates were offered two opportunities each year a considerable proportion of them were willing to risk the chance of passing the first examination with very inadequate preparation, relying on the fact that only six months would elapse before they could essay again to retrieve a failure. That this plan approved itself to large numbers is obvious from the decline in the numbers of candidates who actually appeared. The test imposed by an annual examination is much severer and is one which we may reasonably insist on in consideration of the general advance in education.

CHAPTER II.—Land Records Establishment. (*See* Statement II).

Numbers and qualifications of patwari candidates.

5. In all 911 new candidates were admitted during the year as against 785 in the preceding twelve months. This is a considerable rise: but as the figures in the succeeding paragraph show the increase is not a nett gain Of the new admissions 67 per cent. have passed the F. A., Entrance or Middle Examination, and this proportion, if not as satisfactory as it might be, represents at any rate a great advance on the qualifications of appointed patwaris, only 38 per cent. of whom have passed any one of the above examinations. In the review by the Local Government of last year's report it was observed "that "now that marked cases of under-remuneration have been removed there would "seem to be no reason why the test of the Middle School Examination should "not be insisted on, though it would be of doubtful wisdom to require this "qualification in those districts in which to do so would debar the agricultural "classes from their due share in the Patwari agency." In order to ascertain how far the test referred to is, and can be enforced, I made enquiries from districts and Colonies. I have been informed that the test is now being rigidly enforced in 5 districts while in 18 others relaxation is made only in favour of agriculturists and the sons of patwaris, whose early training by their fathers is considered to compensate for the absence of qualification by recognized educational tests. In the remaining districts more latitude is necessarily allowed, and Montgomery openly confesses its inability to enforce the standard. No doubt in the case of the last named district the introduction of canal irrigation will lead to a general progress in local education.

The total number of all candidates shows a nett decrease of 98, the figures for the year being 3,193 as against 3,291 last year. The percentage of 37 candidates to every 100 patwaris approximates closely to the one-third standard prescribed by the Financial Commissioner, Punjab, in this office Circular No. 14 of the 10th November 1905 : and if allowance be made for the legitimate excess in districts under Settlement the position is not unsatisfactory. Karnal and Jhang, however, have inexplicably large numbers of candidates which might with advantage be reduced. The circumstances of Simla are, of course, abnormal. The proportion of agriculturist candidates accepted is still somewhat low—40 per cent. of the total number. This is a slight falling-off since last year when the percentage was nearly 43.

Patwari schools.

6. Patwari schools were opened in the districts of Hissar, Delhi, Ambala, Kangra, Montgomery, Gurdaspur, Sialkot, Lyallpur, Multan, Ferozepore, Muzaffargarh and Dera Ghazi Khan. No regular schools were opened in the Jhelum Colony, the Gurgaon, Karnal, Simla, and Rawalpindi districts ; though in the last named an examination was held of all candidates who had received practical training under the supervision of capable and experienced patwaris. The question has occasionally been raised as to whether candidates should be allowed to pass the patwari examination piecemeal, *i. e.*, with liability to re-examination only in subjects in which they fail. No rule has been laid down on this question in the Revenue Circulars and the practice varies in districts. Personally, I am of opinion that failure in any one subject should in the simple patwari examination necessitate re-examination in all subjects, not merely in that one. I am confirmed in this

view by some remarks of the Settlement Officer, Rohtak, who in noting that only 22 out of 51 candidates passed the examination held in all subjects, adds "the "results of the examination as a whole was not encouraging: the knowledge they "had gained had been lost by the time they were examined." This is a complaint which I have frequently heard.

Patwari establishment and pay.

7. Establishments were increased in the Lahore, Jhang and Muzaffargarh districts; in the two former owing to the extension of canal irrigation, and in the latter owing to the inability of the present staff to cope with the increasing amount of work caused by the elaborate and complicated local system of fluctuating assessment. Standard rates of pay (Rs. 14, Rs. 12. and Rs. 10) were introduced in the Ludhiana and Hoshiarpur districts. In three districts only—Jullundur, Montgomery and Mianwali—are there now patwaris of the third grade drawing pay of less than Rs. 10.

Efficiency of patwaris.

8. It is worthy of note that the general standard of educational qualification is slowly but surely improving year by year. In 1904 when Statement II was first added to the report the percentage of patwaris who had passed the Middle or some higher examination was 35: last year it was 36: this year the figure is 38. At the same time, the demands on the patwari become annually more severe. This, to a great extent, is due to the increasing elaboration of statistics. In Hoshiarpur the staff of some tracts is reported to be inadequate owing to the *morcellement* of holdings. In the Dera Ghazi Khan district a similar complaint is advanced on the ground of the complications in the local system of fluctuating assessment. The Deputy Commissioner, Jullundur, in the district report throws some doubt on the wisdom of the policy whereby selection for posts has been substituted for the old system of succession by heredity. From the only point of view which admits such a doubt—the zamindar's—he thinks that the policy has been doubtfully successful. The corruption of the modern patwari appears to him both more intensive and more extensive. With this view the Commissioner, Jullundur Division, does not agree. He holds that if the patwari's pay is improved and he is afforded chances of promotion the present system will work satisfactorily. The pay of patwaris in Jullundur district is low, but some time ago when enquiries were made on the subject the Deputy Commissioner reported that there was no difficulty in obtaining recruits at the present rates which are Rs. 12, Rs. 11, and Rs. 9. The present Deputy Commissioner has expressed his opinion that the rates should be levelled up with the standard pay and I am inclined to agree with him. It is not altogether a question of obtaining a plentiful supply of men: it is rather whether the present establishment can be improved at a justifiable expense. The percentage of well-educated patwaris in Jullundur is as small as 35: and though the proportion of well-educated candidates is far higher, there is an obvious danger that men who see themselves worse paid than their compeers in the surrounding districts will be tempted to resort to illegitimate measures of personal compensation. Among the patwaris appointed in Jhang and Gujranwala were two men who have not passed the patwari examination. Enquiry will be made as to the circumstances of these infringements of the rules. It is curious to find that an anachronism still survives in the form of a Ferozepore patwari who can neither write nor read Urdu. His appointment is reported to date back to 1859, and under Land Revenue Rule 22 he is assisted by an educated son.

Conduct of patwaris.

9. The salient features in the record of the conduct of the patwaris are as follows:—

One man of the Hissar district after tendering his resignation absconded with Rs. 756 of *taccavi*. On apprehension and conviction he was sentenced to 8 years' rigorous imprisonment—a punishment which was reduced by the Chief Court to 3 years. Two patwaris of the Mianwali district were convicted of receiving illegal gratifications. In Gurdaspur an unsuccessful attempt was made on the life of a patwari who was deemed to be interfering unnecessarily in land disputes. Last year reference was made to the large number of criminal complaints lodged against patwaris of the Sialkot district. This year cases of this type were even more numerous, amounting to 48. The alleged offences included simple hurt, forgery and house-breaking. No convictions were obtained

against the patwaris. Thirty-five of the cases were dismissed summarily, seven resulted in discharges and three were compounded. The Deputy Commissioner again comments on these indications of discord between the zamindars and patwaris, and holds the latter more or less responsible. Fines, suspensions and grade reductions were less numerous by about 20 per cent. than last year. The figures for Karnal (328) are abnormally high: whilst Gurgaon (191), Mianwali (185), Amritsar (155) and Gujranwala (149) also stand forth prominently in this respect. It should, however, be remembered that in the majority of instances given the districts were under Settlement operations, wherein very close supervision is exercised and a high standard of work is necessarily exacted.

Rewards.

10. Rewards on retirement were sanctioned for 85 patwaris to the amount of Rs. 9,578 prior to the declaration that by the abolition of the Patwar Fund they have become illegal. Opportunity was taken during last cold weather to weed out a large number of aged and incompetent patwaris in the districts under Settlement in the Delhi Division, which fact accounts for the increase of distributions as compared with last year. The subjects of rewards and the counting of service as patwari for pension in the case of patwaris promoted to pensionable posts are under the consideration of Government and need no discussion in this Report. But it may be mentioned that some district officers have thought it advisable pending a final decision as to rewards to refrain from retiring compulsorily men who have become inefficient. I venture to question the wisdom of this course. If patwaris have become really incapable of performing their duties satisfactorily, they should be retired irrespective of any ultimate decision as to the grant of rewards or their substitute. Under the old rules these rewards were never claimable as a right, and they cannot now be so claimed. Moreover, the retention in service of patwaris is now governed by the ordinary rules as to superannuation applicable to all Government servants.

Promotion obtained by patwaris.

11. There were 52 kanungo vacancies during the year. Of these 37 or rather more than a proportion of two-thirds were assigned to patwaris. To them also fell 26 miscellaneous appointments such as reader to the Revenue Assistant, Siaha Nawis, Wasil Baqi Nawis, &c. Out of 97 new kanungo candidates accepted during the year, 56, or just over half, were patwaris. Full attention, however, scarcely seems to have been paid to the claims of patwaris, seeing that though the Provincial establishment has increased, selections from their ranks for the miscellaneous posts noted above have fallen off by one-third.

Assistant patwaris attached to tahsils.

12. Before leaving the subject of establishment I should like to make a few remarks on the subject of the assistant patwaris attached to tahsil offices, who are also designated indifferently *musharadars*, *wazifakhwars*, paid apprentices or naib patwaris. The total number of men thus entertained and distributed among the tahsils of the Province is some hundreds, and their *raisons d'etre* are to assist the office kanungo in his duties (which have much increased of late years), and to form a reserve from which casual vacancies among patwaris may be filled up at short notice. In the course of my tours I have found that these low paid men whose salaries range from Rs. 10 to Rs. 5 are, as often as not, officiating as patwaris in short leave vacancies without substitutes being appointed in the tahsil; and that even when such successors are temporarily appointed they are, owing to inexperience, of no practical assistance to the office kanungo. The result of such lack of continuity is the impossibility of enforcing responsibility, and a material loss of aid to the office kanungo. It is a system, which, as I believe, results in a considerable waste of power and money. I am now addressing district officers on the subject in order to ascertain whether they concur in my view that the replacement of these numerous low-paid assistants by half, or even less than half, their numbers of well-paid patwaris is highly desirable and would result in economy. It seems to me (to outline roughly my proposal) that if in a tahsil where, *e.g.*, 4 such apprentices are paid Rs. 8 per mensem two patwaris chosen from the third or second grade were substituted, to hold their posts for a period of not less than two years, and to receive each a salary of Rs. 15 to compensate for the loss of fees received in

circles, not only would there be a slight saving of cost, but the gain in clerical power would be really valuable. Such patwaris would acquire a thorough knowledge of office work and, if deserving, would also be placed in a favourable position for establishing their claims to succeed at some future date to the post of office kanungo, to fill which post satisfactorily districts at times experience great difficulty. As to the maintenance of a reserve from which to fill vacancies among patwaris this appears to me quite ineffective and superfluous nowadays in ordinary districts on the registers of which are borne the names of 37 candidates for every 100 circles in the Province.

Abolition of the Patwar Fund and its consequences.

13. Little need be said under the head of Patwar Fund Accounts. The new system described in last year's Report continued in force up to April 1st, when under the orders of the Government of India the Patwar Cess was abolished. The abolition of this (which *ipso facto* has raised the patwari to the status of a Government servant) involves among other matters a reconsideration of the system of accounts. It is fortunate, however, that but few modifications will be required in the centralised scheme so recently introduced. The Government of India have already ruled under Article 350 of the Civil Service Regulations that the service of a patwari whether appointed before or after the abolition of the patwari or village officer's cesses and funds, does not qualify for pension in any case in which it did not qualify prior to that abolition: but I have been directed to report as to the present and future status of patwaris for purposes of joining time, transit pay and travelling allowance. The proposals which I am submitting, however, lie outside the scope of the present Report.

Income of the Patwar Fund.

14. The budget estimate of the income of the Patwar Fund for the year under report was fixed at Rs. 14,63,000. The actual nett demand for the Kharif 1905 excluding outstanding balances on account of past years was Rs. 6,88,863 of which Rs. 70,788 remained uncollected after the dates for recovery had passed. It will be seen from the above figures that the abolition of the cess whereby the rabi demand was not realised from the zamindars resulted in an estimated cost to Provincial Funds on the past year of Rs. 7,74,137. Expenditure followed normal lines, the only items calling for comment being those under "other charges" standing against Kangra and the Jhelum Colony—mainly due to construction of patwarkhanas, and the Chenab Colony—mainly due to contribution on account of cost of canal patwari agency. The balance standing to the credit of the now defunct Fund according to the accounts maintained in my office is Rs. 9,75,677. I may observe that Parts I and II of statement IV appended cover respectively an agricultural and a financial year.

Kanungo candidates.

15. As noted last year the numbers of kanungo candidates are still excessive in many districts, conspicuously so in Jhelum (34), Mianwali (32), Chenab Colony (31), Jhang (28), Jullundur (27), &c. Moreover the proportions of patwari and non-patwari candidates are often ill-considered. It has been pointed out by the Commissioner, Rawalpindi Division, that if only one out of every three vacancies is granted to non-patwari candidates the supply in Jhelum is enough for fifty years and in Gujrat for 27 years at the estimated rate of one vacancy per annum. In Jhelum the list contains four times the scale and in Mianwali three times the scale of non-patwari candidates suggested as a guide by the Financial Commissioner, in this office Circular No. 14, dated 10th November 1905.

Among the candidates only one non-patwari of the Attock district has lower educational qualifications than the Entrance Examination pass, and he has been accepted as a special case with the sanction of the Financial Commissioner.

Kanungo examinations.

16. Examinations of candidates for the post of kanungo were held during the year at Wazirabad, Rawalpindi, Jullundur, Peshawar, Delhi and Multan. I attended the last two myself, the Personal Assistant having charge of the others. The total number of candidates from the Punjab and the North-

West Frontier Province examined was 247, including 8 men from Patiala State. Of these 131 completed the examination and 62 were partially successful. This aggregate would have been exceeded but for the strictness with which (except in special cases) men of 35 years and over, and men without the necessary practical training in the field were excluded from sitting in the examinations. Certificates of efficiency were issued to 164 men who had also received practical training in the field. There is only one kanungo in the whole Province who does not possess this certificate, and he has completed the practical training.

Kanungo establishment.—One office kanungo for the new tahsil at Sargodha and one district kanungo, 2 assistant district kanungos, 3 office kanungos and 13 field kanungos for the new Lyallpur District were sanctioned: while the Jhang staff owing to the extension of canal irrigation in that district was reinforced by five new field kanungos. The system of fluctuating assessment necessitated an increase of four field kanungos in Mianwali, and of two permanent and four temporary field kanungos in the Multan district; while one field kanungo was added to the staff of the Dera Ghazi Khan District owing to the transfer of 32 estates from the Dera Ismail Khan district.

Efficiency and conduct of kanungos.

17. As noted last year the staff of field kanungos as a whole is not wanting either in ability or experience. The only comment which I would make here is that in some districts the highly important duties of checking the quadrennial jamabandis assigned by Land Revenue Rules 62 and 126 do not receive as full attention as is desirable. I have referred above to the difficulty occasionally experienced in finding suitable office kanungos. Office kanungos are now in a sense a separate class of officers, but it is to be hoped that the new scheme will not result in stagnation in tahsil offices.

The district kanungo.

18. In last year's Report the suggestion was made that in view of the difficulty experienced in attracting a good type of man to the post of district kanungo, the remedy was to convert this appointment into a Naib Tahsildarship. The proposal was referred by the Financial Commissioner to Commissioners and local officers for expression of their views. The replies received show that a strong body of opinion is adverse to such a course. Among other objections raised it is argued with force that the remedy proposed would only aggravate the evil; because a Naib Tahsildar District Kanungo lacking the prestige which attaches to a Magistrate and executive officer would seek, as soon as created a Naib Tahsildar, to escape into the general line from an appointment where he must content himself with the shadow rather than the substance of power. At the request of the Financial Commissioner I have recently submitted alternative proposals which have been based on totally different lines.

Promotion of kanungos to higher posts.

19. The list of promotion is fairly satisfactory. My office has gained a valuable recruit in the late district kanungo of Ludhiana who was appointed last February as Superintendent of the Land Records Section and confirmed as Superintendent of the reconstituted office with effect from the 1st July 1906. His practical experience has been of great value throughout the year. The district kanungos of Montgomery and Muzaffargarh were appointed to officiate as Tahsildars and the district kanungo of Rohtak has been placed in charge of a Settlement Naib Tahsildar's Circle in his own district. One field kanungo from Amritsar, two from Multan and one from Mianwali were confirmed as Naib Tahsildars. One kanungo from each of the six districts of Ferozepore, Hoshiarpur, Gujranwala, Muzaffargarh, Delhi and Dera Ghazi Khan, two kanungos from each of the four districts of Ambala, Gurgaon, Amritsar and Gujrat and three from Multan were appointed officiating Naib Tahsildars. One kanungo from each of the four districts of Ambala, Ferozepore, Jhelum Colony and Ludhiana was accepted as a candidate for the post of Naib Tahsildar. One office kanungo from the Amritsar district and two from the Gurdáspur district were promoted to the post of district kanungo, while four others were appointed to miscellaneous posts, such as reader to the Revenue Assistant, &c.

CHAPTER III.—Utilization of Land Records. (*See* Statement III).

20. Permanent records are reported generally to be in good condition.

Records-of-rights.

First records of rights were prepared during the twelve months for the Civil Station of Montgomery (which has been declared by the Local Government to be an estate); for 13 villages in the Chunian Colony and for 278 villages in the Chenab Colony. Records-of-rights for the village sites of all the Gugera Branch villages in the latter Colony were also drawn up. Sanction has been given for the preparation of records-of-rights in the Government-owned estates of the Jhelum Colony, while a special revision of the records of the proprietary villages is also being undertaken.

Rebinding of records is required in Rohtak and is in progress in the Montgomery and Sialkot districts.

21. The revenue record room at Gujranwala is already congested and requires more light and ventilation.

The revenue record rooms and their staff.

The Deputy Commissioner considers that the arrival of the new records from the Hafizabad and Khangah Dogran tahsils will render an extension imperative, and has the matter under consideration. An addition of the Dera Ghazi Khan room is also necessary owing to the transfer to the district of 32 estates from Dera Ismail Khan. Alterations in the Muzaffargarh room are in progress.

Enquiries pursued last year demonstrated the fact that the staff of the revenue records room is in most districts undermanned. With the exception of 13 districts (which have a second assistant) the district kanungo and his assistant have hitherto been expected to deal with all work connected with the headquarters revenue record room. Under the rules the district kanungo is compelled to be absent from headquarters on tour during much of the year, and almost the whole burden of office work has thus devolved on the assistant kanungo, who in addition to his other duties is frequently compelled to spend much of his time in attending Courts which require his evidence on knotty revenue points. Sanction has now been accorded by the Local Government to the reinforcement of the revenue record room establishments by the addition of one or two revenue inspection muharrirs according to the needs of districts on pay of Rs. 20 and Rs. 10 per mensem. Where second assistants exist, their posts will gradually be brought under reduction as they fall vacant. The sanctioned relief will be a very material one, but at the same time I venture to suggest that District Officers should watch the statistics of attendance by the staff of the revenue record rooms at Courts to give evidence. The figures communicated to me by districts disclose very marked differences which are not, I think, altogether to be explained by the peculiar characteristics of the people or the local revenue system. I venture to represent the possibility (at any rate) that in some instances the frequent appearances in Court of the district kanungo or his assistant may contain the germ of an abuse which requires to be checked.

22. The Commissioner of the Lahore Division has remarked that in the Montgomery district such records as remain in the custody of the patwari

Patwarkhanas.

are "kept in all sorts of holes and corners, because there are practically no patwarkhanas in the Montgomery district." This observation touches on the rather difficult question of provision of patwarkhanas. As far as their records are concerned the strong box or almirah supplied to every patwari and hitherto paid for from the Patwar Fund should suffice. Patwarkhanas constructed at Government expense are somewhat in the nature of a luxury. Buildings exist in about half the circles of the Province; but most of these were originally built at the expense of the village "Malba Funds," and, I presume, are still legally owned by the village communities. The whole question will be dealt with, no doubt, in connection with the future status of the patwari.

23. There were 815,561 mutations for disposal during the year, of which 718,523 were attested leaving a balance of 97,038. The heaviest work occurred in Gurgaon, Hoshiarpur, Jullundur, Ferozepore, Rawalpindi and Karnal. The

Mutations.

advance on last year's figures may be attributed partly to Settlement operations and partly to the bumper rabi harvest which enabled zamindars to redeem their mortgages. (I may note, parenthetically, in this connection that there has been a correspondingly large increase in registration of deeds). In Dera Ghazi Khan only is there a considerable number of mutations pending over two years, and the circumstances there are peculiar, the arrears being due to emigration from one tract on account of scarcity. In all, 19 Extra Naib Tahsildars were deputed for varying periods to deal with work where heaviest Two of these in Hissar are specially commended for good work. In one district, however, an Extra Naib Tahsildar was deputed who apparently had had no revenue experience. So far from affording assistance some thousands of his orders had to be specially scrutinised and over 1,800 reviewed by the ordinary staff. I would offer for consideration the advisability of a rule to be strictly enforced that no Extra Naib Tahsildar be deputed for mutation work who has not had at least one year's practical training in the field. It is worse than useless to appoint men entirely ignorant of all revenue principles and procedure. In compliance with the instructions of the Financial Commissioner during the year I invited the special attention of revenue officers to the remarks contained in paragraph 4 of the review by the Local Government of last year's Report. It is, of course, too soon to estimate what improvement has taken place in mutation work since the orders were issued: but there certainly have been lately indications of a more thorough grasp by revenue officers of the principles of Act XIII of 1900.

Partitions.

24. The total number of partition cases for disposal was 12,870 including 4,354 carried over from last year. The balances are heavy in Gujranwala (604), Jhelum Colony (477), Karnal (331) and Ferozepore (221). In the first three mentioned *killabandi* and Settlement operations are attributable causes. As will be noticed there are again small discrepancies in columns 3 and 8 of Statement III when compared with last year's similar statement.

Annual Records.

25. Almost all the 9,309 detailed *jamabandis* prepared were completed by the due date. In view of the approaching Settlement the detailed records were drawn up for the whole of the villages of the four Hissar tahsils to come under re-assessment. No quadrennial *jamabandis* were taken in hand in Gurgaon, Rohtak or Jhelum Colony where Settlements are in progress. According to the statistics received no *jamabandis* were checked by the Collector or his assistant in Simla, Karnal, or Gujranwala. Presumably, there have been errors of omission in the reports. More such checking would appear to be required in the Ambala, Kangra, Hoshiarpur, Montgomery, Lahore, Amritsar, Shahpur, Attock, Mianwali and Muzaffargarh districts. Crop inspections and checks were carried out on the usual scale.

Abstract note-books.

26. The statistical part of the abstract note-books is carefully maintained. The Settlement Officer's notes have been copied into the volumes in Hoshiarpur: and in a consdierable number of other districts remarks have been recorded by the Collectors and their assistants. In Sialkot, Jhelum and Lahore the recorded notes were found to be of much practical utility as a guide to recovery and remission of suspended revenue.

Changes in the note-books.

27. An important innovation adopted under the instructions of the Government of India will be introduced into all note-books with effect from Kharif 1906. Hitherto it has been the practice to show in the crop abstract statements the matured areas only of each crop. In order to secure statistical uniformity throughout the country the Government of India has requested that following the practice of most other Provinces the sown and not only the matured areas of each crop should be returned. To effect this it will be necessary in future to show failed areas as well as matured under each crop. As a corollary, directions have been given that in the village note-books all areas shall be shown in acres and not in the local standard of measurement. Further modifications in our statistics to ensure the return of nett areas annually irrigated as well as of gross areas of irrigated crops are still under consideration. 201

Survey marks.

23. Trijunction pillars and survey marks are generally reported to be in good condition except in Delhi, Lahore, Gurdaspur, Jhelum and parts of Rohtak, Ambala and Hoshiarpur. The repairs in Rohtak have been delayed by famine. In those villages of Ambala where mud pillars were tried the experiment has proved unsuccessful. In Hoshiarpur complaint is made of the damage caused by passing traffic. This could probably be obviated by using stout billets of wood as bumping posts.

L. FRENCH,

Director of Land Records,

Punjab.

22*nd December* 1906.

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

QUINQUENNIAL RETURN.

STATEMENT I.

TABLE SHOWING THE STATISTICS OF EXISTING PATWARI AND FIELD KANUNGO CIRCLES.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
District.	Number of field Kánungos.	Number of Patwáris.	Area and Revenue (00's omitted). Area in acres. Total.	Area in acres. Cultivated.	Total assessment.	Number of fields.	Number of Khatauni holdings.	Average per Field Kanungo. Fields.	Khatauni holdings.	Average per Patwari. Fields.	Khatauni holdings.	Rates of Patwári Cess per cent. on Land Revenue.	Remarks.
					Rs.								
Hissár	15	306	33,151	26,139	7,716	435,579	278,807	29,039	18,254	1,423	895	4-11-0 to 6-4-0	Rs. 5-3-4 in four tahsils, Rs. 4-11-0 in Budhláda and Rs. 6-4-0 in Sirsa.
Rohtak	10	242	11,542	9,655	9,574	711,056	290,534	71,106	29,053	2,938	1,201	3-4 0 to 3-8-0	Rs. 3-8-0 in Sámpla and Jhajjar, Rs. 3-4-0 in Rohtak and Rs. 3-0-0 in Gohána.
Gurgáon	14	310	12,415	10,014	12,094	1,091,321	336,146	77,952	24,010	3,520	1,084	4-0-0	
Delhi	11	225	8,157	5,463	8,504	1,134,884	272,133	103,171	24,739	5,044	1,209	4-0-0	
Karnál	15	333	20,154	11,548	10,727	1,146,409	335,202	76,427	22,347	3,443	1,007	4-4-0 to 5-7-6	Rs. 4-4-0 in Karnál and Pánipat, Rs. 5-7-6 in Indri, Rs. 5-6-8 in Thánesar, Rs. 4-11-0 in Kaithal and Rs. 5-6-8 in Pahowa.
Ambála	15	356	11,127	6,271	9,607	1,379,072	407,500	91,938	27,167	3,874	1,145	4-11-0	
Simla	1	8	490	100	175	48,111	9,489	48,111	9,489	6,014	1,186	(*a*) 6-4-0 to (*b*) 5-0-0	(*a*) In Simla and Kotgarh. (*b*) In Kotkhai.
Kángra	16	315	24,678	5,902	9,263	2,210,735	447,733	138,171	27,983	7,018	1,421	Rs. 3-2-0 to 5-3-4	
Hoshiárpur	20	461	14,304	7,296	14,296	2,945,644	801,527	147,282	40,076	6,390	1,739	(*c*) 4-4-0 to (*d*) 4-2-8	(*c*) In Una. (*d*) In other tahsils.
Jullundur	14	402	8,703	6,975	14,877	2,040,805	557,178	145,772	39,798	5,077	1,386	3-11-2	
Ludhiána	14	300	8,910	7,655	11,103	1,479,592	354,815	105,685	25,344	4,932	1,183	3-2-0	
Ferozepore	16	356	26,118	21,855	11,798	1,350,591	458,250	84,412	28,641	3,794	1,287	(*e*) 4-11-0 to (*f*) 6-7-4	(*e*) In Ferozepore, Moga, Zira and Muktasar. (*f*) In Fázilka.
Montgomery	13	207	29,532	6,843	4,235	920,106	136,471	70,777	10,498	4,445	659	6-4-0	
Lahore	15	321	23,001	13,226	10,306	1,806,670	430,211	120,445	28,681	5,628	1,340	5-0-0	
Amritsar	11	305	9,977	7,886	12,605	1,426,676	544,632	129,698	49,512	4,678	1,786	4-11-0	
Gurdáspur	17	426	11,675	8,510	15,383	1,578,049	615,865	92,826	36,227	3,704	1,446	4-11-0	
Siálkot	17	463	12,648	9,501	14,928	1,879,652	669,128	110,568	39,360	4,664	1,660	5-3-4	
Gujránwála New Colony	17	317	19,046	11,544	10,713	1,172,679	313,955	68,981	18,468	3,699	990	5-3-4 to 7-8-0	
Gujrát	10	232	12,319	8,435	8,423	1,114,517	418,012	111,452	41,801	4,804	1,802	4-11-0	
Sháhpur Jhelum Colony	7	133	20,190	6,033	4,843	384,017	136,610	54,860	19,516	2,887	1,027	4-0-0	
Jhelum	11	207	17,713	7,484	7,575	1,437,638	367,827	130,694	33,439	6,945	1,777	6-4-0	
Ráwalpindi	9	183	13,091	6,004	5,448	971,433	353,247	107,937	39,250	5,308	1,930	4-11-0 to 6-4-0	Rs. 5-0-0 in Ráwalpindi, Rs. 6-4-0 in Kahuta and Murree and Rs. 4-11-0 in Gujar Khan.
Attock	8	186	26,966	10,332	5,894	740,054	308,633	92,507	38,579	3,979	1,659	§5-0-0 to *6-4-0	§ In Fatehjang. * In other Tahsils.
Miánwáli	11	176	49,771	7,423	4,441	703,658	211,284	63,969	19,208	3,998	1,200	5-0-0 to 6-4-0	Fixed Rs. 5-0-0 and fluctuating Rs. 6-4-0 in Leiah and Bhakkar, Rs. 5-0-0 in Isa Khel and Miánwáli.
Jhang Chenáb Colony	27	441	43,318	18,214	14,165	2,634,087	219,673	97,559	8,136	5,973	498	5-5-0 (*x*) 7-8-0 (*y*)	(*x*) District. (*y*) Colony.
Multán	19	326	38,105	9,715	8,084	1,157,129	170,341	60,902	8,965	3,549	523	6-4-0	
Muzaffargarh	22	249	20,193	5,167	6,785	928,498	272,984	42,202	12,408	3,729	1,096	6-4-0	
Dera Gházi Khan	11	180	34,789	9,842	5,203	568,333	222,354	51,667	20,214	3,157	1,235	6-4-0	Pacca Rs. 5-0-0, Kacha Rs. 6-4-0.
Total	386	7,906	562,083	295,032	258,765	35,396,995	9,935,541	91,702	25,740	4,477	1,257	...	

NOTE.—This is a quinquennial statement. It was prepared for the Report for 1902-03.
The abolition of the Patwár Cess with effect from April 1st, 1906, has rendered the figures in columns 13 and 14 obsolete.

STATEMENT II.—(See Chapter II).

STATEMENT SHOWING THE EDUCATIONAL QUALIFICATIONS OF PATWARIS AND PATWARI CANDIDATES AND PUNISHMENTS AND PROMOTIONS OF PATWARIS FOR THE YEAR ENDING 15th June 1906.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	Patwaris and Assistant Patwaris.									Candidates.							
District.	Number.	Number who have passed.		Total of columns 3 and 4.	Percentage of column 5 on column 2.	Number who are agriculturists.	Number dismissed.	Number reduced, suspended or fined.	Number promoted to Kanungoships or other appointments.	Number.	Percentage of column 11 on column 2.	Number who have passed.		Total of columns 13 and 14.	Number who are agriculturists.	Number who have passed the Patwari Examination.	Remarks.
		The Entrance or Higher Examination.	The Middle School Examination.									The Entrance or Higher Examination.	The Middle School Examination.				
Hissár	331	4	95	99	30	69	1	13	...	152	46	5	52	57	80	125	
Rohtak	258	4	106	110	43	50	2	85	2	90	35	1	65	66	31	50	
Gurgáon	332	5	169	174	52	75	11	191	6	115	35	...	75	75	48	61	
Delhi	237	...	101	101	43	45	3	15	2	95	40	4	85	89	27	25	
Karnál	353	5	126	131	37	108	2	328	2	324	92	19	219	238	101	133	
Ambala	381	7	171	178	47	101	2	42	...	161	43	10	138	148	59	37	
Simla	8	...	1	1	12	8	...	...	...	7	87	...	...	...	7	4	
Kángra	315	...	63	63	20	122	11	41	4	116	37	3	93	96	50	107	
Hoshi rpur	481	8	193	201	42	157	6	55	3	124	26	3	105	108	61	116	
Jullundur	418	6	140	146	35	101	11	60	2	95	23	3	79	82	41	95	
Ludhiána	307	3	159	162	53	85	...	32	...	56	18	1	48	49	17	39	
Ferozepore	379	2	123	125	33	117	1	39	4	86	23	5	61	66	19	58	
Montgomery	214	1	61	62	29	36	3	67	1	85	39	3	41	44	24	74	
Lahore	328	3	132	135	41	83	3	82	4	129	39	10	79	89	37	122	
Amritsar	325	3	138	141	43	68	1	155	4	70	22	4	56	60	16	49	
Gurdáspur	481	11	168	179	37	137	3	22	2	105	22	5	66	71	27	98	
Siálkot	420	13	102	115	27	113	3	99	1	106	25	6	73	79	53	101	
Gujránwála	314	7	98	105	33	47	7	149	...	97	31	6	59	65	27	70	
Gujrát	244	2	45	47	19	56	...	30	1	68	28	...	35	35	39	45	
Shahpur	146	1	34	35	24	30	1	49	3	82	56	3	28	31	51	38	
Jhelum	221	1	68	69	31	47	...	73	1	65	29	7	44	51	35	53	
Ráwalpindi	231	3	56	59	26	106	3	36	...	132	57	2	38	40	78	113	
Attock	214	1	58	59	28	86	2	25	2	92	43	1	29	30	48	41	
Jhelum Colony	155	...	69	69	45	42	4	4	3	14	9	...	5	5	7	11	
Miánwáli	205	6	78	84	41	57	3	185	9	54	26	1	31	32	19	53	
Lyallpur	364	11	237	248	68	112	4	6	1	157	43	7	128	135	44	121	
Jhang	210	4	86	90	43	46	...	...	...	175	83	12	95	107	64	102	
Multan	363	9	158	167	46	83	...	98	2	158	44	7	90	97	68	36	
Muzaffargarh	285	5	114	119	42	81	2	3	4	89	32	3	34	37	48	84	
Dera Gházi Khan ...	189	1	44	45	24	144	...	111	...	94	50	3	41	44	67	15	
Total ...	8,709	126	3,193	3,319	38	2,412	89	2,095	63	3,193	37	134	1,992	2,126	1,293	2,076	

STATEMENT No. III.—(See Chapter III).

STATEMENT SHOWING THE WORKING OF THE LAND RECORD AGENCY DURING THE YEAR ENDING 30th JUNE 1906.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
		Mutations.					Partitions.							Detailed Jamabandis.			Number of Villages in which crop inspections were checked.			District Kanungo's work.				
District.	Number of villages.	Number pending from last year.	Number instituted.	Total for disposal.	Number attested.	Balance unattested at close of year.	Number pending from last year.	Number instituted.	Total for disposal.	Number decided.	Area in acres involved in decided cases.	Cultivated area in acres included in column 12.	Number of cases pending at close of year.	Number of villages for which prepared during the year.	Number of villages in which checked by Collector and his assistants.	Number of detailed jamabandis filed by due dates.	By Collector and his Assistants.	By Tahsildars.	By Naib Tahsildars.	Number of days spent on tour.	Number of villages tested.	Number of inspections of Tahsil Offices.	Number of trijunction pillars repaired during the year.	Remarks.
Hissár	1,008	1,722	23,688	25,410	23,383	2,027	97	263	360	236	72,501	58,660	124	766	168	764	593	327	627	115	179	7	...	
Rohtak	514	1,401	29,049	30,450	25,135	5,315	45	260	305	199	4,090	2,727	106	514	82	485	580	373	566	138	51	3	1,080	
Gurgáon	1,263	11,475	61,345	72,820	60,466	12,354	84	185	269	201	4,310	3,225	68	...	...	...	198	874	1,136	68	329	...	916	
Delhi	820	*2,921	24,330	27,251	25,414	1,837	*92	156	248	170	9,515	7,820	78	820	87	799	385	181	223	191	356	6	...	* In the last year's Report figures were incorrect.
Karnál	1,486	3,161	38,224	41,385	35,449	5,936	156	380	536	205	10,643	8,495	331	207	...	154	155	482	1,367	...	...	...	47	
Ambala	1,795	5,890	30,479	36,369	32,296	4,073	87	265	352	242	5,902	2,092	110	439	13	439	402	443	454	75	112	2	320	
Simla	21	147	595	742	613	129	1	8	9	7	114	33	2	6	...	6	...	...	11	113	20	...	...	
Kángra	718	3,090	32,375	35,465	34,316	1,149	108	473	581	444	4,027	2,554	137	293	16	285	27	379	262	28	7	1	268	
Hoshiárpur	2,179	5,332	37,569	42,901	39,198	3,703	221	410	631	454	5,609	2,311	177	512	26	512	67	418	419	212	372	8	1,474	
Jullundur	1,313	2,068	36,135	38,203	36,828	1,375	101	324	425	310	8,213	5,301	115	307	166	307	320	488	526	213	479	8	1,016	
Ludhiána	905	1,046	24,765	25,811	24,567	1,244	32	230	262	223	2,283	2,276	39	210	50	210	157	383	523	206	650	6	543	
Ferozepore	1,612	4,654	39,723	44,377	39,486	4,891	125	427	552	331	40,784	20,489	221	400	104	398	450	556	660	195	538	11	...	
Montgomery	1,402	575	2,748	3,323	2,963	360	37	129	166	110	21,302	10,114	56	365	32	350	81	459	510	114	354	8	...	
Lahore	1,655	2,121	16,419	18,540	16,891	1,649	82	166	248	119	2,526	1,688	129	343	29	289	327	747	1,009	67	57	2	...	
Amritsar	1,075	5,565	24,892	30,457	27,965	2,492	139	342	481	351	13,236	9,726	130	220	26	215	179	510	451	124	230	6	15	
Gurdáspur	2,365	3,697	25,991	29,688	25,725	3,963	75	259	334	264	8,568	7,245	70	627	67	627	345	499	608	52	61	8	13	
Siálkot	2,524	1,672	29,029	30,701	27,984	2,717	88	233	321	198	6,354	5,041	123	648	103	638	409	642	418	152	416	8	1,507	
Gujránwála	1,255	1,770	10,942	12,712	10,859	1,853	489	372	861	257	36,806	17,149	604	167	...	167	344	489	1,290	105	311	8	217	
Gujrát	1,430	3,521	28,376	31,897	27,071	4,826	109	311	420	322	4,650	4,235	98	372	35	372	69	577	510	164	415	21	...	
Shahpur	528	589	7,393	7,982	7,208	774	54	106	160	94	21,552	11,516	66	114	21	114	276	192	261	180	303	7	...	
Jhelum	954	3,705	17,600	21,305	18,119	3,186	151	229	380	252	8,150	5,576	128	209	76	209	175	313	285	148	413	6	...	
Ráwalpindi	1,167	8,679	68,679	77,358	64,377	12,981	395	520	915	618	15,772	9,397	297	...	...	...	12	219	548	...	...	...	...	
Attock	622	2,635	20,087	22,722	19,719	3,003	270	261	531	235	17,176	11,718	296	73	20	73	97	271	393	11	...	3	15	
Jhelum Colony	604	572	4,500	5,072	4,366	706	344	167	512	35	26,494	2,954	477	40	...	40	95	268	...	...	...	...	...	
Miánwáli	451	3,305	28,693	31,998	26,238	5,760	195	383	581	289	29,569	14,054	292	96	12	96	250	193	356	60	68	3	...	
Lyallpur	1,479	1,586	21,649	23,235	21,409	1,826	18	57	70	51	8,007	6,243	19	553	91	553	146	344	625	8	168	...	643	
Jhang	799	893	5,016	5,909	5,099	813	254	499	753	470	66,734	13,148	283	239	193	239	82	380	480	...	...	...	141	
Multan	1,449	563	8,999	9,562	9,146	416	120	294	414	287	12,191	5,411	127	361	37	361	304	361	1,086	99	175	9	34	
Muzaffargarh	769	* 1,939	11,540	13,479	11,444	2,036	242	429	671	375	10,942	5,134	296	187	28	187	219	153	707	147	160	8	1	* Ditto
Dera Gházi Khan ...	794	3,393	15,044	18,437	14,789	3,648	144	378	522	353	22,148	11,984	169	221	62	217	260	267	527	212	835	8	51	
Total ...	34,906	89,687	725,874	8,15,561	718,523	97,038	4,354	8,516	12,870	7,702	5,00,168	268,316	5,168	9,309	1,544	9,106	7,004	11,788	16,838	3,197	7,059	157	8,301	

STATEMENT IV.

SHOWING INCOME AND EXPENDITURE OF THE PATWAR FUND.

1	2	3	4	5	6	7	8
District.	Part I.—Abstract of Income of the Patwar Fund for the year ending 30th September 1906.			Part II.—Abstract of expenditure of the Patwar Fund for the year ending 31st March 1906.			Remarks.
	Net demand for Kharif 1905.	Amount collected.	Balance outstanding.	Salaries.	Other charges.	Total expenditure.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Hissár	43,597	29,472	14,125	49,060	1,643	50,703	
Rohtak	23,730	9,233	14,497	34,597	7,158	41,755	
Gurgáon	25,293	10,366	14,927	42,127	5,689	47,816	
Delhi	19,640	12,800	6,840	36,389	1,689	38,078	
Karnál	31,393	25,364	6,029	48,202	9,128	57,330	
Ambála	28,437	27,234	1,203	50,933	3,577	54,510	
Simla	496	496	...	1,062	147	1,209	
Kángra	29,182	29,156	26	42,588	13,528	56,116	
Hoshiárpur	30,828	30,828	...	60,757	3,243	64,000	
Jullundur	32,548	(a) 32,596	12	55,918	3,314	59,232	(a) Includes Rs. 60 realized in excess by mistake.
Ludhiána	19,942	19,908	34	37,188	3,073	40,261	
Ferozepore	30,527	30,508	19	54,177	3,224	57,401	
Montgomery	15,400	12,201	3,199	26,635	3,537	30,172	
Lahore	24,166	23,140	1,026	46,283	3,045	49,328	
Amritsar	29,818	(b) 29,685	137	45,581	3,332	48,913	(b) Includes Rs. 4 recovered in excess by mistake.
Gurdáspur	36,424	36,424	...	65,762	4,271	70,033	
Siálkot	38,528	38,295	233	59,174	3,695	62,869	
Gujránwála	37,237	36,629	608	40,342	4,924	45,266	
Gujrát	18,300	18,300	...	34,705	2,849	37,554	
Shahpur	10,343	9,083	1,260	18,755	1,132	19,887	
Jhelum	19,685	18,546	1,139	29,901	1,199	31,100	
Colony	8,304	8,079	225	21,960	13,573	35,532	
Rawalpindi	16,910	16,910	...	29,799	6,685	36,484	
Attock	18,241	17,409	832	28,520	4,786	33,306	
Miánwáli	7,566	6,512	(c) 984	24,322	5,152	29,474	(c) Excludes Rs. 70 remitted.
Lyallpur	29,775	29,022	(d) 172	50,301	53,732	1,04,033	(d) Do. Rs. 581 remitted.
Jhang	10,595	9,502	1,093	27,994	3,291	31,285	
Multán	21,081	21,081	...	47,782	2,837	50,619	
Muzaffargarh	13,544	13,543	1	37,388	5,241	42,629	
Dera Gházi Khan ...	17,333	(e) 15,205	2,167	26,028	2,110	28,138	(e) Includes Rs. 39 recovered in excess by mistake.
Total ...	6,88,863	6,17,527	70,788	11,74,230	1,80,803	13,55,033	

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PUNJAB LAND RECORD DEPARTMENT
REPORT FOR 1907.

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REPORT

ON THE

OPERATIONS OF THE DEPARTMENT

OF

LAND RECORDS,

PUNJAB,

For the year ending the 30th September, 1907.

Published by Authority.

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1907.

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No. 56 (Rev. & Agri.—Rev.).

FROM

W. M. HAILEY, ESQUIRE,

Secretary to Government,

Punjab and its Dependencies,

To

THE SENIOR SECRETARY TO THE FINANCIAL COMMISSIONER, PUNJAB.

Dated Lahore, 7th March 1908.

File No.

Revenue and Agriculture.

Revenue.

SIR,

I AM directed to acknowledge the receipt of your letter No. 69, dated the 27th January 1908, with which you forwarded the annual report of the Department of Land Records for the year ending 30th September 1907. The report has reached Government 16 days late.

2. In paragraph 5 of the Government review on the Director's report for the previous year it was pointed out that the success of the patwari agency depends on their sympathy with the needs of the agriculturist class. Accordingly the Lieutenant-Governor appreciates the efforts made in the past year to secure a larger number of patwari candidates from the ranks of the agricultural tribes, and is pleased to learn that the proportion of agriculturist candidates has somewhat increased while, at the same time, the improvement in the standard of education of candidate has been maintained. The submission of the revised rules referred to in paragraph 5 of the report is awaited.

3. The efficiency of patwaris is reported to be on the whole satisfactory, but the Director qualifies his appreciation of their work by a reference to their low pay. The question of increasing their pay cannot be considered at present, but the Lieutenant-Governor trusts that no effort will be spared to secure to them the prospects of promotion to which they are entitled under the present rules and to improve those prospects whenever opportunity occurs. At present this is the chief means at our disposal for raising the status of the service generally. The Lieutenant-Governor concurs in the remarks of the Financial Commissioner, regarding the danger of allowing the abolition of the patwari cess to operate in the direction of officialising the patwari establishment.

4. The housing of the patwari staff requires attention. His Honour agrees that the present position is an unsatisfactory one, but he will not anticipate a decision on the question, which should be referred separately, if the Financial Commissioner finds himself able to make definite proposals to Government on the subject.

5. The Lieutenant-Governor fears that there is considerable ground for Mr. Hamilton's complaint of the inefficiency of field kanungos as a supervising agency in districts where the land revenue is fixed, and hopes that the matter will receive consideration at the hands of district officers.

6. The Director has again noticed the demands made upon the time of the record room staff in connection with the work of the courts and His Honour requests that the Financial Commissioner will issue directions with regard to the abuse brought to notice in paragraph 16 of the report. The Lieutenant-Governor believes that an even greater evil exists in the frequent attendance of patwaris in judicial cases to give oral evidence of the contents of the records in their charge. The practice is objectionable, as not only leading to a great waste of the patwaris' time, but giving them a direct interest in fomenting litigation. In most cases extracts from the records would be sufficient, and more satisfactory for the court which requires the evidence.

7. As regards the question referred to in paragraphs 19 of the report and 8 of your letter whether it will be possible ultimately to dispense with the special revision of records effected during settlement operations, the Lieutenant-Governor is not prepared to express a final opinion, though he inclines to the Financial Commissioner's view. The Director's statement of the case would appear to be exaggerated. The question will perhaps come before Government in a more definite form, and in the absence of further information than that contained in the report and your letter it is unnecessary to pursue it further.

8. His Honour would be glad if the Financial Commissioner would notice next year the result of the plan now being tried in the Lahore division (paragraph 21 of the report) of attaching extra Naib Tahsildars to the tahsil for ordinary work and detailing the permanent Naib Tahsildars for mutation work.

9. His Honour wishes to thank the Director for an interesting report and to acknowledge the good work done by him and his Personal Assistant during the year.

I have, &c.,

W. M. HAILEY,

Secretary to Government, Punjab.

Punjab Government Press, Lahore—10-3-08—870—385.—H. L. S.

No. 69.

FINANCIAL COMMISSIONER'S OFFICE :

Dated LAHORE, *27th January* 1908.

FROM

E. R. ABBOTT, ESQUIRE,

Senior Secretary to Financial Commissioner, Punjab,

To

THE HON'BLE MR. E. D. MACLAGAN,

Chief Secretary to Government, Punjab.

SIR,

I am directed to forward a copy of the Annual Report of the Department of Land Records, Punjab, for the year ending 30th September 1907. The report which was due in this office on December 15th was not received until January 6th, the reason of the delay is given in paragraph 27 of the report.

2. The Director has devoted considerable space to the important question of the enlistment of patwari candidates, and it is clear that in many districts this subject does not obtain the attention which it deserves. The surest method of improving the general efficiency of the patwari staff is to take care that only suitable men are enlisted as candidates, and in view of the numbers offering for enlistment there ought to be no difficulty in achieving this result. Deputy Commissioners should frequently scrutinise the registers and eliminate those candidates who are not up to the desired standard. The Financial Commissioner agrees with the Director in his condemnation of the practice of accepting large numbers of candidates just before a patwari school is opened.

The proportion of candidates borne on the registers who have passed the Middle or higher examinations is now 64 per cent. and 43 per cent. belong to agricultural tribes. These figures compare favourably with the proportion of 40 per cent. and 27 per cent. which these classes bear in the present staff of patwaris, and on the whole show satisfactory progress in the direction of securing a larger proportion of men of the agricultural classes for the post of patwari. But the Financial Commissioner trusts that Deputy Commissioners will pay still more attention to the attainment of this object.

3. The Financial Commissioner agrees with the Director that on the whole the conduct and work of the patwaris are satisfactory. Some of them are no doubt corrupt, incompetent or discontented : but, as a body, they perform their useful duties diligently, loyally and well. The danger is that, now that they are paid by Government, they may come to be regarded rather as a grade of Government servants than as members of the village community and become too much officialised. Deputy Commissioners should be on their guard against this tendency, and in making appointments and transfers (which are rarely advisable) they should think not so much of the personal interest of the patwari, or even of the efficiency of his statistical work, as of his real usefulness to the villagers of his circle from his local knowledge, character and influence. If a patwari is generally disliked in his circle, that may be a reason for dismissing him. It can rarely be a good reason for transferring him.

4. It is essential that patwaris should live within their circles and the account given by the Director of the state of the patwarkhanas is not satisfactory. The scheme which the Director has under consideration should be pushed on as quickly as possible as delay only means greater eventual expense. The possibility of invoking the agency of the District Board suggests itself.

Such bodies already maintain buildings in many of the villages where patwarkhanas exist. The Financial Commissioner is inclined to think that, in view of the altered status of the patwaris, Government should, when the finances permit, provide a suitable residence in each circle and keep it in repair.

5. In detailing the promotion of patwaris in paragraph 11 of the report the Director appears to have omitted promotions to the post of Settlement Kanungo. As regards the reported disregard of the rules of promotion to the post of Kanungo, explanations will be called for from the districts concerned.

6. The orders issued with the object of reducing the number of Kanungo candidates and of securing a larger proportion of patwaris on the register should be carried out even at the cost of some hardship to individuals whose names have been entered contrary to existing orders: and strict adherence should be required to Land Revenue Rule 103 (*v*) which prescribes that at least two vacancies out of every three shall be given to accepted candidates who are patwaris.

7. The difficulty which the Director experiences in obtaining the appointment of Kanungos to the post of Sadr Kanungo is regrettable. Such promotion is necessary not only in the interests of the Kanungos themselves but also because the special experience required for the post can only be obtained by men who have served as Kanungo. The abuse which is brought to notice in paragraph 16 of the report is objectionable and should be put a stop to. On the other hand there is no great objection to the practice of putting Tahsil Office Kanungos in charge of lambardari and partition files with which they are presumably better able to deal than is the judicial moharrir who would be the alternative.

8. The papers referred to in paragraph 19 of the report are at present with the Settlement Commissioner. The Financial Commissioner does not agree with the Director that the records can be satisfactorily maintained without a special revision once in a generation.

9. The mutation work of the Province is exceedingly heavy, and it is undoubtedly the case that the actual balance of mutation cases is very much larger than is entered in Statement IV. The Director has possibly under-estimated the time involved in writing up and checking mutations before they are submitted to the attesting officer: but the attention of Deputy Commissioners will be drawn to his remarks in paragraphs 20 and 21.

No encouragement should be given to the idea that mutations need not be attested on the spot. The publicity secured by local attestation is one of the chief safeguards against inaccuracy and carelessness in mutation work.

The Financial Commissioner agrees with the report that the record of rights is generally in good condition and believes that although it may be in many cases of individual holdings not quite up to date, it is generally satisfactorily accurate. The Deputy Commissioner of Shahpur will be asked to report what grounds he has for holding that the detailed *jamabandis prepared this year* are, for the most part, very bad, why he was unable to supervise *their preparation* better and what steps he has taken to remove the deficiency.

10. The inaccuracy of the village note-books reported by the Director is unsatisfactory considering the importance of these records : an efficient check of the entries in the note-books is one of the duties of the Sadr Kanungo and these officials should not be allowed to neglect this branch of their work.

The Director's condemnation of the abstract village note-books is not shared by the Financial Commissioner, though it is probably true enough that the use made of them is not as great as might be.

11. The Financial Commissioner has much pleasure in drawing attention to the activity displayed by the Director during the year in dealing with the important, though uninteresting subject of the improvement of the arrangements for the supply of patwari stationery, lithography and plotting scales.

12. The attempt being made by the Director to secure better attention to the notes made by inspecting officers is on the right lines. A translation of the

notes should always be sent where possible : work of this description must necessarily be delayed in district offices, and in any case a translation made under the supervision of the officer who wrote the original note will convey a lucid meaning which is not always the case with one hurriedly made in the district office. Deputy Commissioners should see that attention is paid to these notes, and that the suggestions made in them are duly carried out unless the Deputy Commissioner sees good reason in particular cases for not acting upon them.

13. The Director in his useful report has perhaps naturally dwelt more upon the deficiencies of the existing land record system than on its advantages. But the facts remain that during the year over 9,000 village records were prepared, nearly 800,000 changes in permanent rights were attested at or near the village by a Revenue Officer, over 8,000 partition cases were decided, and a vast mass of agricultural statistics collected. In the opinion of the Financial Commissioner these records and statistics are in the main wonderfully accurate, very much more so than they were twenty-five years ago, and the revenue staff in all grades is much more efficient and is steadily improving. He believes that the system not only provides Government with much indispensable information about the state of the crops and the circumstances of the agricultural community, but supplies to landowners and cultivators an accurate record of their rights in which they put well-deserved trust and which in innumerable cases saves them from bitter disputes and ruinous litigation. And he thinks that all ranks of revenue officials, including the patwaris, deserve credit for the valuable work they have done during the year.

I have, &c.,

E. R. ABBOTT,

Senior Secretary to Financial Commissioner, Punjab.

ANNUAL REPORT
OF THE
DEPARTMENT
OF
LAND RECORDS, PUNJAB;
For the year ending 30th September 1907.

CHAPTER I.—Prefatory.

Personal. Tours.

1. Mr. French was Director of Land Records from October to the end of 1906, and I have been in charge during the remainder of the year. Sheikh Amir-ud-din and Malik Zaman Mehdi Khan have been the Personal Assistants throughout the year except for a short time in the beginning when there was only one Personal Assistant. Mr. French and I were on tour for 185 days and inspected 6 head-quarter offices and 12 tahsil offices. The Personal Assistants were on tour for 345 days and inspected 11 head-quarter and 38 tahsil offices. Chiefly owing to illness the touring has been inadequate. The number of offices inspected seems small in comparison with the number of days spent on tour, but it has to be remembered that there were registration offices, factories and coal mines to be inspected or visited, and cases for the increase of tahsil establishment to be enquired into on the spot, and these branches of our work are not dealt with in this report. I think that in future we ought to be able to inspect all tahsils not under settlement once in each year.

Strengthening of tahsil establishments.

2. The local enquiry into the strengthening of tahsil establishments has now been completed, and the net result, when orders have been passed on all cases, will probably be that extra establishment will be sanctioned for 24 out of 119 tahsils in the province. This has been an unsatisfactory piece of work, for it is almost impossible for a peripatetic officer to gauge the amount of work in a tahsil from a single visit. Moreover the answer to the question where overwork begins must always depend largely on the idiosyncrasies of the Tahsildars and Deputy Commissioners concerned. My personal view is that the cry of overwork in tahsils (except sadr tahsils) has not much in it.

Naib Tahsildar examinations.

3. The usual examination of Naib Tahsildar candidates was held in August. One hundred and eleven candidates appeared. The standard of general intelligence is extraordinarily low; some cases of copying of papers were detected.

4. Some changes have been made this year in the forms attached to this report. Statements II (not printed), III and III A give fuller information as to the recruitment of patwaris, and kanungos. Statement V shows the expenditure on patwaris under the separate budget heads.

CHAPTER II.—Land Records Establishment.

Patwari candidates.

5. With a view to securing a larger proportion of patwari candidates belonging to agricultural tribes a circular was issued in April last requiring that (1) no candidate, who did not belong to an agricultural tribe, should be accepted unless he had passed the Middle School Examination; and (2) in certain districts, where the number of candidates exceeded 33 per cent. of the patwari posts,

no new non-agricultural candidates should be accepted at all. Revised rules under the Land Revenue Act with a similar object are now under the consideration of Government. The circular has had some effect, but not so much as we could have hoped. The number of new candidates accepted during the year has been 827 as compared with 911 last year. Of these 377 are said to belong to agricultural tribes whereas last year 426 candidates said to be "agriculturists" were enlisted. There is still over-enlistment of non-agricultural candidates in Ludhiana, Amritsar (a very bad case), Gujranwala, Attock, Jhelum, Mianwali, and nearly all districts under settlement. The Deputy Commissioner of Ferozepore remarks on the difficulty of obtaining candidates of agricultural tribes. So does the Deputy Commissioner of Amritsar. Of the new agriculturist candidates 159 (46 of them in Mianwali) have not passed the Middle School Examination. We must expect these candidates to be lacking in educational qualifications so long as Middle Schools are to be found only in the larger towns, but it is curious that the central districts such as Lahore and Amritsar should shew up so badly as they do in this respect. Of the 450 other new candidates 111 have not passed the Middle School Examination : in Hissar, Karnal, Ludhiana, Gujranwala and Mianwali large numbers of unpassed men have been accepted. Presumably most of these were accepted before the issue of the circular referred to above.

There is in some districts a pernicious practice of accepting a vast number of candidates just before a patwari school is opened. For instance, in Ludhiana 126 and in Mianwali 116 new candidates were taken this year. This is the worst form of recruitment, for it prevents discrimination and leads to a hopeless block. As a result one finds greyheads of over thirty being appointed assistant patwaris on Rs. 8 per mensem. We may be sure that if these men were worth having they would have got appointments in other departments long before.

The total number of candidates has been reduced from 3,193 to 2,862 and is now below the prescribed maximum of 33 per cent. of the patwari posts. Candidates are, however, still in excess in Hissar, Karnal, Ambala, Kangra, Ludhiana, Rawalpindi, Mianwali and Dera Ghazi Khan. Of these candidates only 1,227, or a little less than 43 per cent., belong to agricultural tribes. The proportion can only be gradually raised as old candidates are removed from the registers.

It is very curious that amongst the agriculturist candidates Muhammadans should be so very greatly in excess of Hindus. Of the 377 new candidates 253 are Muhammadans, and of the 193 new appointments 146 went to Muhammadans. In proportion to the population figures for the province the Muhammadans should have only three appointments for every two that go to Hindus. I am afraid the explanation is not that agricultural Muhammadans are more highly educated than Hindus or that the Muhammadans shew any special desire for the post of patwari, but that many Muhammadans such as Syads are included under the head of agricultural tribes though their hereditary occupation is service. Thus the proportion of real agriculturists among patwaris and candidates is probably even lower than the figures suggest.

Patwari schools.

6. Patwari schools were opened in the districts of Kangra, Ludhiana, Gurdaspur, Mianwali and Lyallpur. They should be opened this year in Rohtak, Delhi, Karnal, Ferozepore, Amritsar, Gujrat and the Jhelum Colony where the proportion of unpassed candidates is large ; or if schools are not required in the districts under settlement, patwari examinations should at least be held there.

New appointments of patwaris.

7. Of the 544 new patwaris appointed during the year 193 belonged to agricultural tribes. It is not at all satisfactory that out of 38 new appointments in Lahore only 7 should have fallen to agriculturists ; and out of 52 in Gujranwala only 11, out of 26 in Rohtak 4, out of 42 in Delhi 11, out of 11 in Ferozepore 1, out of 20 in the Jhelum Colony only 6 should have gone to them.

Four men in Delhi and 2 men in the Jhelum Colony were appointed patwaris though they had not passed the patwari examination which was not according to rule.

Patwari establishment.

8. The strength of the patwari staff has not been altered in any district during the year except in Mianwali where it has been increased by 44 men. The appointment of inspection muharrirs in the revenue record rooms has given an opportunity to get rid of a number of record-lifters employed in them and irregularly listed in the patwari establishment. Several officers urge the need for increasing the pay of patwaris especially in tracts where the assessment is fluctuating. The Settlement Officer, the Commissioner and myself recommended that a beginning should be made by raising the pay of the patwaris of Mianwali, but the proposal was vetoed by the Financial Commissioner.

Efficiency of patwaris.

9. The conduct and work of the patwaris are, considering their low pay, satisfactory. It is extraordinary, however, how vastly the reputation of the patwaris as a body varies from district to district. The Settlement Officer of Delhi has found many to be "old and effete," and he has had to stop the allowances of "the majority" for idleness. On the other hand, the Settlement Officer of Rawalpindi says: "the standard of efficiency among the patwaris is high. Their conduct has in general been satisfactory. They took no part in the disturbances of the spring and, beyond a slight tendency to join the Hafizabad patwaris in a demand for higher pay, worked contentedly during the year." The Rawalpindi patwaris show up better than the Gujrat men, 56 of whom had to be fined for submitting an application for promotion direct to Government, an incident as to whic the Commissioner remarks that "the Gujrat patwaris unduly insist upon wha they consider to be their rights, and any exercise by the Deputy Commissioner of his discretion of selecting for promotion otherwise than in accordance with the principle of seniority invariably calls forth a crop of appeals." Unfortunately in some divisions the principle of promotion by seniority is evidently approved, and with the present centralized system this means an entire abrogation of the Deputy Commissioner's discretion. In several districts besides Hafizabad and Gujrat there have been rumours of strikes, but the strikers have not come up to the scratch. The patwaris of Lyallpur come to grief chiefly over the assessment of ground rent (kiraya tahzamini) as to which the Commissioner justly says that the remedy is to get rid of the ground rent. To the patwaris of Multan "the fluctuating assessment is a great temptation of fraud to which they generally yield." In Gurgaon and Muzaffargarh the patwaris' work is satisfactory; in Karnal the patwaris are competent; in Hoshiarpur efficient, and so on in many other districts. On the other hand, in Sialkot adultery, drinking, cheating, theft, robbery, bribery and house-trespass are some of the offences with which patwaris were charged during the year.

There can be little doubt that these contrarieties in reputation are due in part to the personal equation and in part to the differences of treatment accorded to patwaris in different districts. The more we have to do with the patwaris the more readily we must acknowledge that we get as much efficiency as we can expect for the money we spend, and that we cannot hope for whole-hearted service or entire honesty in return for a bare living wage.

Patwarkhanas and residence of patwaris.

10. The greater number of the patwarkhanas throughout the Province have fallen to ruins, and the ruin is yearly spreading. The present policy of making the patwari responsible for repairs has totally failed and has resulted in Government having on its hands hundreds of houses in varying stages of dilapidation. I have the matter under consideration but have not yet worked out a scheme to my own satisfaction. Supposing Government were willing to undertake the cost of the repair of patwarkhanas what agency could actually frame the estimates and carry out the repairs? In the meanwhile the want of patwarkhanas increases the difficulty in most districts of inducing the patwaris to live in their circles. This is a point as to which compulsion is absolutely necessary if the patwari is to have that knowledge of the circumstances of his charge which is essential for the accurate preparation of a record of rights and is to feel the effects of the social disapproval of his fellow villagers which can alone restrain his exactions. In some districts monthly stoppages of pay and in others continuing fines of Re. 1 or Rs. 2 the month are enforced, when the patwari or his family is non-resident, but the effect is only partial. I doubt the wisdom of the fines which in some districts amount to very large sums.

Promotion of patwaris.

11. During the year there were 59 vacancies among the kanungos, of which 36 were given to patwaris. In Hissar, Rohtak, Ludhiana, Rawalpindi, Multan and Dera Ghazi Khan the rule—which by the way has the force of law—that two-thirds of the vacancies should go to patwaris was disregarded. Other 35 patwaris were promoted to inferior clerical posts chiefly as siaha navises and judicial muharrirs. Altogether this means promotion for only one man in 122 in the year, which is practical stagnation. If only district officers could resist the pressure brought upon them to enlist entrance-passed candidates for direct appointment as kanungos the prospects of patwaris would be brightened, and in addition we should have more efficient kanungos.

Retiring gratuities for patwaris.

12. It was finally decided during the year that patwaris were not to get pensions and that they should continue to be eligible for gratuities varying from Rs. 90 to Rs. 150 on retirement. Form No. V shows the payment of only 18 gratuities at a cost of Rs. 2,292. As a matter of fact 46 more gratuities at a total cost of Rs. 5,605 have already been sanctioned and probably a good many more will be granted before the close of the financial year. Still the applications are unexpectedly small when it is remembered that during most of the preceding year the grant of gratuities was temporarily abandoned. Though the gratuities are so meagre some Deputy Commissioners hesitate to recommend men for the full amount which they can obtain.

Uselessness of revenue patwaris in Lyallpur Colony.

13. The Deputy Commissioner of Lyallpur remarks that "except for mutation work and the supply of certain executive information as to deaths of pensioners, amount of timber cut from Government waste, etc., the revenue patwari in districts where the whole of the assessment is a fluctuating one on matured areas and includes the record of the sown area and is in the hands of the Irrigation Department, spends a great deal of time and costs a considerable sum both to Government and the zamindars in collecting agricultural statistics which have already been collected by another department. This seems an anomaly, though the sum total of figures collected by him seldom actually agrees with those collected by the canal patwari. Possibly at some time these two underlings may be combined without loss of efficiency at a saving to the state and to the great benefit of the cultivator." I was much struck during a tour I made through the Chenab Colony this year at the leisure enjoyed by the revenue patwaris. Almost their sole work seemed to be the entry of mutations regarding the village site a work which one would think much better left undone. As the Commissioner remarks it is of course essential that any unification of the patwari staff should be under the district revenue authorities not under the irrigation department.

Kanungo candidates.

14. In order to get the register of kanungo candidates cleared and to secure a larger proportion of patwaris as candidates a circular was issued in May pointing out that if two out of three kanungos' vacancies were to go to patwaris the same proportion between patwaris and others should be observed in the register of kanungo candidates, and also requesting that the total number of candidates should be reduced to one-half of the kanungo appointments. This has resulted in the reduction of candidates from 577 to 467 and to the raising of the proportion of the candidates who are patwaris. But further reductions are required especially in Hissar, Kangra, Jullundur, Ludhiana, Ferozepore, Montgomery, Gujrat, Jhelum, Mianwali, Lyallpur and Dera Ghazi Khan. The Deputy Commissioner of Ferozepore says: "It will be very hard to curtail the list of candidates by removing any person for no fault of his ..... I have therefore decided to keep the register closed till the strength is reduced below the prescribed maximum. Of the 28 candidates 12 are patwaris and 16 entrance or F. A. passed non-officials." This is surely short-sighted, for most of the entrance-passed men cannot possibly get appointments for another 20 years, and their names might as well be cut off at once. Moreover notwithstanding the enormous numbers already on their lists the Deputy Commissioners of Kangra, Ferozepore and Jhelum enlisted yet 6, 5 and 6 new candidates.

Even such a simple matter as getting rid of unqualified candidates has its difficulties for one Commissioner restored to the register the names of three patwaris who were over 35 years of age and whose names had been removed under Land Revenue Rule 103.

Of the 65 new candidates enlisted only 28 were patwaris. Here again the offending districts were Hissar, Kangra, Ferozepore, Gurdaspur, Gujrat, Jhelum (six non-patwaris) and Jhang.

Examinations of Kanungos.

15. Examinations of kanungo candidates were held by my Personal Assistants in all divisions of the province and also at Peshawar. The candidates numbered 184, of whom 84 were wholly and 28 partially successful.

Sadr and office kanungos.

16. The sadr and office kanungos have generally worked satisfactorily during the year. Among the sadr kanungos those of Lahore and Gujranwala must be excepted, as their touring was quite inadequate. For a year the sadr kanungo of Lahore did not go on tour at all. I recommended that he should be dismissed, as a sadr kanungo who does not tour is useless, but he has only been warned.

Most Deputy Commissioners insist on their sadr kanungos having a knowledge of English which I think is a pity. For his proper work no English is needed, and there is great temptation to keep a sadr kanungo who knows English at head-quarters for the preparation of returns and reports which should be compiled in the English office.

The sadr kanungo's office work has been lightened by the appointment of one or two revenue inspection muharrirs in each district whose duty it is to produce records in civil and other courts when required. Attention is called by the Commissioner of Jullundur and the Deputy Commissioner of Ferozepore to an abuse which I have noticed elsewhere and which should be strongly resisted, whereby the sadr kanungo is made to prepare lengthy abstracts from the revenue records to help courts and pleaders who are ignorant of their way about jamabandis, etc.

The tahsil office kanungos are saddled in too many districts—and not perhaps altogether against their will, as this class of work may be profitable—with lambardari and partition cases. This leads to the employment of an assistant patwari in the Tahsil to help the office kanungo, which is really quite unnecessary, as the latter is, if he is allowed to do only his own work, by no means a heavily worked official except just for a short time on three occasions in the year when he has to write up the village note-books. On those occasions the field kanungos should help under Land Revenue Rule 127.

Field kanungos.

17. The field kanungos are the weak link in the revenue chain. Where there is fluctuating assessment they remain fairly efficient, but elsewhere there is usually a great peace after the close of Settlement and the kanungos slumber. Every inspection we make—except in a few districts such as Umballa and Multan—emphasizes the superficial character of the kanungo's work. Still it is not altogether their fault: they seem to have much of their time wasted in hurrying across their circles for extraneous work and in attending on Tahsildars, who do not care to attest mutations unaided.

Promotion of kanungos.

18. Only nine kanungos obtained promotion of any sort during the year, and of these only 3 obtained Naib Tahsildarships. I regret that it is hard to secure for them even the post of sadr kanungo. In two cases district officers wished to appoint a wasil baki navis, who had never been a permanent kanungo, as sadr kanungo, and in at least one other case a Settlement Naib Tahsildar who was a kanungo only in name was put forward.

CHAPTER III.—Utilization of Land Records. (*See* Statement IV).

Records of rights.

19. The records of rights are generally reported to be in good condition. Apart from regular settlements, the only revision in progress was of the record

of the Dada Siba Jagir in the Kangra district which is being brought into accord with the orders passed by the Commissioner of Jullundur on appeal. Arrangements have been made at Ludhiana to extend the revenue record room so that it will hold the records of all the tahsils of the district. In the Jhelum district the transference of settlement records from the general to the revenue record room is not yet complete.

Last summer a clever article appeared in the *Pioneer* under the title of "A new method of roasting pig" in which the folly of our periodical holocaust of our records at settlement was pointed out. I submitted this article to the Financial Commissioner with calculations to shew that even allowing for a considerable increase in the permanent staff there would be a saving of over a lakh of rupees a year if we abandoned the settlement revisions of records, and in my opinion we could do this without our records becoming any less worthy of the presumption of truth which belongs to them than they are at present. No orders have yet been received.

Annual records.

20. Nine thousand three hundred and ninty-eight jamabandis were prepared and most of them were filed by the prescribed date. But notwithstanding a special circular on the subject and also a revision of the quarterly statement of maintenance of village records, so as to show each stage of the attestation of the jamabandis, we do not seem to be much nearer the attainment of properly attested and checked jamabandis than we were. Sometimes, I am afraid, the quarterly statements can only be described by a euphemism as inaccurate, for they show as checked jamabandis which have not been checked. For instance the Dera Ghazi Khan statement shows all jamabandis as checked under rule 126 whereas hardly any have been so checked. It is explained that something just as good has been done. I do not admit that it is just as good and in any case it is not what is required by rule 126. There are other similar cases.

From Kangra the Deputy Commissioner reports that the kanungos cannot generally check the jamabandis in September as the girdavari begins on September 15th. I have been told this elsewhere also. The cure is patent: the Deputy Commissioners should order that the jamabandis should be filed by August 25th. The Deputy Commissioner of Amritsar remarks: "The revenue officers' attestation (of jamabandis) is not generally so satisfactory as very few Tahsildars and Naib Tahsildars take keen interest in the proper attestation. Sometimes they summon the neighbouring villagers to a place where they are halting instead of taking the trouble of attesting on the spot." These remarks are, I expect, applicable to the Tahsildars in most tahsils. Any way the result is that in many districts large number of changes which have occurred are not incorporated in the jamabandis and faulty procedure is everywhere common. One cause of this is the practice of everyone leaving to a subordinate the work which he should do himself. The kanungo does not correct himself the mistakes which he discovers, but orders the patwari to correct them, and the revenue officer leaves the mistakes which he discovers—and they are seldom numerous or important—to the kanungo and he to the patwari.*

Mutation work.

21. Work steadily increases and this year the number of cases for disposal amounted to 889,374 compared with 815,561 last year. Of these 782,935 were disposed of and the large balance of 106,439 has been left over. As a matter of fact the balance must be very much larger than this, for numbers of mutations are brought to light by kanungos at their attestations of jamabandis in August, and these are nearly always—quite improperly—left over to be entered up subsequently when the patwari sees fit. If only kanungos and also revenue officers would have the mutations they discover entered up at once in their presence the arrears would not be so large. Extra Naib Tahsildars were deputed by the Commissioners to the hardest worked districts, but their work is apt to be distinguished by quantity rather than quality. The Commissioner of Lahore is now trying a plan, which from my point of view has much to commend it, whereby the extra men are attached to the tahsils for ordinary work and the permanent Naib Tahsildars do the mutation work.

* The Deputy Commissioner of Shahpur writes in his report, which I have since received:—"The detailed jamabandis prepared this year are, for the most part, very bad and quite undeserving of the presumption of truth which the law attaches to them." Certainly the revenue work of the Shahpur district is far from good, but the recognition of this fact is the first step—and it is a step in advance of most districts—towards amelioration.

It is extremely difficult to induce officers to attest mutations within the patwari's circle and the difficulty is all the greater because some Deputy Commissioners sympathize with the Tahsildars. For instance in one report it is said:— "The revenue officers in most cases try to dispose of mutation work on the spot, but in order to clear of the accumulated work they have necessarily to collect the neighbouring patwaris at one place. This practice is against the standing orders, but the revenue officers find it more convenient to stick to one central place than to move from place to place." This attitude is reproved by the Commissioner, and there can be little doubt that if mutations were always attested on the spot there would be less disregard of the facts of possession and less anxiety to find plausible reasons for rejecting in the absence of the parties mutations which have been pending for some time. On the whole the mutation work of the Province has not reached that high standard which will be necessary if the record of rights is to be the only record of assurances.

Note-books.

22. The remarks of District officers about the note-books are usually confined to the statement that they are up to date. The fact is that very little attention is paid to the check of the entries in the note-books and they are often full of gross mistakes. All our agricultural statistics are derived from them, so this neglect is unfortunate.

In the abstract village note-books remarks have been recorded only in the districts of Ambala, Hoshiarpur, Ludhiana, Ferozepore, Montgomery, Sialkot and Jhelum. From Jhelum alone are we told that these books are of use. I fail to see that they are of any use: for one thing the books ought to be kept in the sadr, not in the tahsil, where the much more convenient village book is available.

Partitions.

23. The number of partition cases for disposal was 13,276 of which 8,698 were decided. The year closes with a smaller pending file than it opened with. The heaviest files are in Karnal (446), Gujranwala (595), Jhelum Colony (268) and Mianwali (275). It has been proposed that a special officer should be deputed to take up the Gujranwala cases.

Survey marks.

24. In most districts attention is being given to the repair of survey pillars and boundary marks. The two trigonometrical survey pillars in the Gurgaon district are reported to be in bad condition. It is a curious arrangement that they should be in the charge of the Superintendent of Police. The Montgomery settlement was completed a good many years ago, but the Deputy Commissioner reports that of the stones for square survey marks 42 are still lying without being fixed on the base lines and 560 stones have not even been bought as yet.

Supply of patwari stationery, etc.

25. During the year new arrangements have been made for the supply of mapping sheets and of plotting scales, and fresh contracts for the supply of blank paper and the lithographing of patwari forms have been obtained but not finally settled.

The mapping sheets which are now being supplied by Rai Gulab Singh & Sons are nearly as good as English mapping sheets, and I hope they will gradually supplant the English sheets altogether. They cost (ruled and backed) Rs. 30 the hundred as compared with Rs. 36-8-0 the hundred for English sheets: ruled but unbacked—the form in which they are most in demand—they cost Rs 9 against Rs. 17-4-0 hitherto paid.

The plotting scales are made by a Maler Kotla firm. If they work up to sample there should be no further trouble. But I have had to raise the price of an 8-inch scale from Re. 0-12-0 to Re. 1.

I cannot get paper as cheap as was possible a few years ago. A new firm has, however, tendered at rates which are below those now paid, and I shall probably accept this tender for a term of years. As to lithography work Rai Gulab Singh & Sons have offered greatly reduced rates and their tender will

be accepted. It will be of enormous advantage to have all the work done by one firm and the bugbear of monopoly need not alarm us. The new contract will contain conditions to prevent delay in the delivery of supplies and also to provide for early compliance with those emergent indents which Deputy Commissioners and Settlement Officers with some disregard of the conditions of lithography are constantly sending in. I hope Settlement Officers will realize that my contract rates even on the old scale were considerably lower and on the new scale will be out of comparison lower than they themselves can obtain, and will in future refrain from having work done at private presses and so wasting Government money. I may quote the instance of one Settlement Officer who during this year paid Rs. 394 for some ordinary standard forms for which my charge would have been Rs. 59. Of course there has been great delay hitherto both in my office and in the presses in complying with indents, but this I hope to cure next year. New sample books are being prepared and new rules for indenting and paying for forms will shortly be issued.

Inspection notes.

26. At our inspections we notice not infrequently that previous inspection notes by the Director or his Assistants are not to be found in the tahsils or only to be found in English. Hitherto only two English copies of our notes have been sent to each Deputy Commissioner, but I am now trying to send also a translation, so as to save the Deputy Commissioners trouble, and I hope our notes will reach the Tahsildars for whom they are intended more rapidly and surely. I have been told that more attention might be paid to the notes if they were briefer. They certainly are long, but I do not see how this can be avoided. What we have to look to are matters of detail, for the general principles of land record work are well known and notes intended to point out mistakes in details cannot but be lengthy if the mistakes are numerous. Even where a principle has to be enunciated it is necessary to point the moral with particular instances. Only a very small part of our notes requires the personal attention of the Deputy Commissioners and the remainder can safely be passed on to the Tahsildars through the Revenue Assistant without comment. Clearly we inspecting officers are entirely wasted if our notes are not attended to.

27. I am sorry that this report is late. The delay is due partly to Deputy Commissioners not sending in their reports in time—as it is I have had to write this report without the figures and the reports of the Shahpur district and of the Jhelum Colony—and partly to my having more important work to do when the belated materials did reach me.

W. S. HAMILTON,

Director of Land Records.

12*th December* 1907.

QUINQUENNIAL RETURN.

STATEMENT I.

TABLE SHOWING THE STATISTICS OF EXISTING PATWARI AND FIELD KANUNGO CIRCLES.

1. District.	2 Number of field Kanungos.	3 Number of Patwáris.	4 Area and Revenue (00's omitted.) Area in acres. Total.	5 Area and Revenue (00's omitted.) Area in acres. Cultivated.	6 Total assessment.	7 Number of fields.	8 Number of Khatanni holdings.	9 Average per Field Kanungo. Fields.	10 Average per Field Kanungo. Khatanni holdings.	11 Average per Patwari. Fields.	12 Average per Patwari. Khatanni holdings.	13 Remarks.
					Rs.							
Hissár	15	306	33,151	26,139	7,716	435,579	273,807	29,039	18,254	1,423	895	
Rohtak	10	242	11,542	9,655	9,574	711,056	290,534	71,106	29,053	2,938	1,201	
Gurgáon	14	310	12,415	10,014	12,094	1,091,321	336,146	77,952	24,010	2,520	1,084	
Delhi	11	225	8,157	5,463	8,504	1,134,884	272,133	103,171	24,739	5,044	1,209	
Karnál	15	333	20,154	11,548	10,727	1,146,409	335,202	76,427	22,347	3,443	1,007	
Ambála	15	356	11,127	6,271	9,607	1,379,072	407,500	91,938	27,167	3,874	1,145	
Simla	1	8	490	100	175	48,111	9,489	48,111	9,489	6,014	1,186	
Kángra	16	315	24,675	5,902	9,263	2,210,735	447,733	138,171	27,983	7,018	1,421	
Hoshiárpur	20	461	14,304	7,296	14,296	2,945,644	801,527	147,282	40,076	6,390	1,739	
Jullundur	14	402	8,703	6,975	14,877	2,040,805	557,178	145,772	39,798	5,077	1,386	
Ludhiána	14	300	8,910	7,655	11,103	1,479,592	354,815	105,685	25,344	4,932	1,183	
Ferozepore	16	356	26,118	21 855	11,798	1,350 591	458 250	84,412	28.641	3.794	1,287	
Montgomery	13	207	29,532	6,843	4,235	920,106	136,471	70,777	10,498	4,445	659	
Lahore	15	321	23,001	13,226	10,306	1,806,670	430,211	120,445	28,681	5,628	1,340	
Amritsar	11	305	9,977	7,886	12,605	1,426,676	544,652	129,698	49.512	4,678	1,786	
Gurdáspur	17	426	11,675	8,510	15,383	1,578,049	615,865	92,826	36,227	3,704	1,446	
Siálkot	17	403	12,648	9,501	14,928	1,879,652	669,128	110,568	39,360	4,664	1,660	
Gujránwála } New Colony }	17	317	19,046	11,544	10,713	1,172,679	313,955	68,981	18,468	3,699	990	
Gujrát	10	232	12,319	8,425	8,423	1,114,517	418,012	111,452	41,801	4,804	1,802	
Shahpur { Jhelum Colony }	7	133	20,190	6,033	4,843	384,017	136,610	54,860	19,516	2,887	1,027	
Jhelum	11	207	17,713	7,484	7,575	1,437,638	367,827	130,694	33,439	6.945	1,777	
Ráwalpindi	9	183	13,091	6,004	5,448	971,433	353.247	107.937	39.250	5,308	1,930	
Attock	8	186	26, 66	10.332	5,894	740,054	308,633	92.507	38,579	3,979	1,659	
Miánwáli	11	176	49,771	7,423	4,441	703,658	211,284	63,969	19,208	3,998	1,200	
Jhang } Chenáb Colony }	27	441	43,318	18,214	14,165	2,634,087	219,673	97,559	8,136	5,973	498	
Multan	19	326	38,105	9,715	8,084	1,157,129	170,341	60,902	8,965	3,549	523	
Muzaffargarh	22	249	20,193	5,167	6,785	928,498	272,984	42,202	12,408	3,729	1,096	
Dera Gházi Khan	11	180	34,789	9,842	5,203	568,333	222,354	51,667	20,214	3,157	1,235	
Total	386	7,906	562,083	265,032	258,765	35,396,995	9,935,541	91,702	25,740	4,477	1,257	

NOTE.—This is quinquennial statement. It was prepared for the Report for 1902-03.

STATEMENT No. III.

STATEMENT SHOWING THE EDUCATIONAL QUALIFICATIONS OF PATWARIS AND PATWARI CANDIDATES AND PUNISHMENTS AND PROMOTIONS OF PATWARIS FOR THE YEAR ENDING 30TH SEPTEMBER 1907.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	PATWARIS AND ASSISTANT PATWARIS.									CANDIDATES.							
DISTRICT.	Number.	Number who have passed. The old Entrance or present Matriculation Examination of the University or higher examinations.	Number who have passed. The old University Middle School or present Departmental Middle School Examination.	Total of columns 3 and 4.	Percentage of column 5 on column 2.	Number who belong to agricultural tribes.	Number dismissed.	Number reduced, suspended, or fined.	Number promoted to Kanungoships or other appointments.	Number.	Percentage of column 11 on column 2.	Number who have passed. The old Entrance or present Matriculation Examination of the University or higher examinations.	Number who have passed. The old University Middle School or present Departmental Middle School Examination.	Total of columns 13 and 14.	Number who belong to agricultural tribes.	Number who have passed the Patwari Examination.	REMARKS.
Hissár	331	3	88	91	28	74	...	11	2	140	42	4	34	38	67	100	
Rohtak	242	3	120	123	51	53	12	200	5	79	29	...	51	51	28	12	
Gurgáon	332	3	177	180	54	95	7	172	5	84	25	...	54	54	38	68	
Delhi	227	1	125	126	56	59	10	58	...	51	23	1	42	43	15	11	
Karnál	353	6	124	130	37	116	14	304	2	180	51	4	113	117	60	87	
Ambála	381	7	176	183	48	107	4	63	2	107	59	7	88	95	45	71	
Simla	8	...	1	1	12	8	...	2	1	6	75	...	...	...	6	3	
Kángra	315	...	67	67	21	126	3	24	...	140	44	2	108	110	67	135	
Hoshiárpur	481	8	207	215	45	162	12	44	2	98	20	1	87	88	46	91	
Jullundur	402	5	148	153	38	104	5	96	5	86	22	4	75	79	37	85	
Ludhiána	307	4	170	174	57	86	2	55	2	157	51	4	120	124	65	125	
Ferozepore	378	3	127	130	34	111	1	58	4	110	29	7	80	87	32	55	
Montgomery	214	1	56	57	27	36	9	19	...	73	34	5	37	42	14	65	
Lahore	356	3	157	160	45	93	3	83	1	103	29	5	51	56	38	77	
Amritsar	325	4	133	137	42	69	1	129	3	101	31	1	84	85	27	33	
Gurdáspur	481	12	183	195	41	136	10	52	6	133	28	11	97	108	61	129	
Siálkot	425	13	116	129	30	117	4	69	2	86	20	6	54	60	44	82	
Gujránwal	364	7	148	155	43	56	14	202	8	91	25	...	47	47	33	65	
Gujrát	244	1	43	44	18	79	...	77	1	81	33	4	48	52	52	43	
Shahpur	146	...	34	34	23	32	5	25	3	44	30	2	16	18	30	22	
Jhelum Colony... ..	157	1	71	72	46	48	3	3	...	35	22	1	12	13	16	18	
Jhelum	221	2	71	73	33	47	6	41	...	63	29	5	37	42	28	47	
Rawálpindi	231	2	58	60	26	79	2	80	3	107	46	3	29	32	62	83	
Attock	214	2	61	63	29	73	8	68	3	65	30	1	25	26	26	48	
Miánwáli	205	5	77	82	40	43	2	156	..	170	83	1	83	84	66	169	
Lyallpur	316	15	211	226	71	65	1	15	3	105	33	7	82	89	32	93	
Jhang	209	4	91	95	45	29	14	7	2	51	24	3	35	38	9	42	
Multán	363	8	157	165	45	89	1	69	2	139	38	6	85	91	66	115	
Muzaffargarh	285	7	107	114	45	77	2	175	2	88	31	3	34	37	48	71	
Dera Gházi Khan ...	191	...	45	45	24	100	5	122	2	89	47	4	32	36	69	66	
TOTAL ...	8,706	130	3,349	3,479	39	2,369	160	2,479	71	2,862	33	102	1,740	1,842	1,227	2,111	

STATEMENT No. III A.

STATEMENT SHOWING EDUCATIONAL QUALIFICATIONS OF KANUNGOS AND KANUNGO CANDIDATES AND PROMOTIONS OF KANUNGOS FOR THE YEAR ENDING 30TH SEPTEMBER 1907.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	KANUNGOS.					KANUNGO CANDIDATES.									
DISTRICT.	Total number of the Kanungo establishment.	*Number of Kanungo vacancies filled during the year.*			Number of Kanungos promoted to Naib Tahsildarship or higher appointments during the year.	*Total number of candidates on the list.*			Percentage of column 9 on column 2.	Number who belong to agricultural tribes.	*Number who have passed.*		Number who have passed the Kanungo Examination.	Number who have received Director's certificate of efficiency.	REMARKS.
		Given to Patwaris accepted under Rule 103 (*ii*).	Given to candidates accepted under Rule 103 (*iii*).	Total.		Accepted under Rule 103 (*ii*).	Accepted under Rule 103 (*iii*).	Total.			The old Entrance or present Matriculation Examination of the University or higher examinations.	The old University or present Departmental Middle School Examination.			
Hissár	27	5	4	9	...	17	10	27	100	7	10	10	20	17	
Rohtak	16	5	4	9	...	5	2	7	44	1	2	2	5	5	
Gurgáon	21	...	...	...	...	7	5	12	57	4	5	7	12	11	
Delhi	16	...	1	1	...	4	4	8	50	3	4	2	4	3	
Karnál	22	...	...	...	...	5	10	15	68	8	10	3	12	6	
Ambála	23	...	...	...	...	7	5	12	52	3	6	5	12	11	
Simla	2	...	...	...	...	1	1	2	100	2	1	1	2	2	
Kángra	26	...	...	...	...	18	12	30	115	7	12	8	19	18	
Hoshiárpur ...	26	...	...	...	...	9	4	13	50	...	6	7	11	9	
Jullundur	20	3	1	4	...	14	10	24	120	12	10	11	19	17	
Ludhiána	21	1	2	3	2	11	9	20	95	10	9	9	18	17	
Ferozepore	24	...	1	1	1	12	16	28	117	8	16	5	13	13	
Montgomery ...	19	...	...	...	...	9	8	17	89	3	8	2	13	13	
Lahore	21	1	...	1	...	7	4	11	52	4	5	5	4	4	
Amritsar	16	2	...	2	1	4	5	9	56	5	5	3	7	7	
Gurdáspur	23	4	1	5	1	12	12	24	104	6	14	3	4	1	
Siálkot	25	1	...	1	...	11	5	16	64	8	7	4	14	12	
Gujránwála	22	1	...	1	...	8	8	16	73	3	11	1	9	9	
Gujrát	15	1	...	1	...	9	9	18	120	4	9	5	11	11	
Shahpur	13	1	...	1	...	5	2	7	54	5	2	3	7	7	
Jhelum Colony ...	14	1	...	1	...	5	4	9	64	3	4	3	4	4	
Jhelum	16	...	...	...	...	15	16	31	194	7	16	11	14	13	
Ráwalpindi	18	4	5	9	...	8	4	12	66	5	5	7	8	8	
Attock	16	1	...	1	2	6	2	8	50	2	2	5	6	6	
Miánwáli	21	...	...	...	1	13	5	18	86	9	5	7	8	7	
Lyallpur	19	...	...	...	...	12	7	19	100	8	8	9	15	13	
Jhang	17	1	...	1	...	6	5	11	65	4	5	3	9	8	
Multan	29	2	2	4	1	10	5	15	52	2	8	7	15	13	
Muzaffargarh ...	27	1	...	1	...	9	5	14	52	8	5	9	14	14	
Dera Gházi Khan...	19	1	2	3	...	11	3	14	74	5	3	7	14	14	
Total ...	594	36	23	59	9	270	197	467	79	154	213	164	323	288	

STATEMENT No. IV.

STATEMENT SHOWING THE WORKING OF THE LAND RECORD AGENCY DURING THE YEAR ENDING 30TH SEPTEMBER, 1907.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
		Mutations.					Partitions.							Detailed Jamabandis.			Number of Villages in which crop inspections were checked.			District Kanungos' work.			Boundary and Survey Marks.			
Districts.	Number of villages.	Number pending from last year.	Number instituted.	Total for disposal.	Number attested.	Balance unattested at close of year.	Number pending from last year.	Number instituted.	Total for disposal.	Number decided.	Area in acres involved in decided cases.	Cultivated area in acres included in column 12.	Number of cases pending at close of year.	Number of villages for which prepared during the year.	Number of villages in which checked by Collector and his Assistants.	Number of jamabandis and annual papers filed by due dates.	By Collector and his Assistants.	By Tahsildars.	By Naib Tahsildars.	Number of days spent on tour.	Number of villages tested.	Number of inspections of Tahsil Offices.	Total repaired during the year. Tri-junction pillars.	Square survey marks.	Traverse points.	Trigonometrical survey pillars.
Hissár	1,007	2,027	27,415	29,442	22,977	6,465	124	429	553	296	46,285	16,206	257	82	...	82	392	437	773	119	26	5	1,206	6	94	12
Rohtak	514	4,769	53,369	58-138	49,528	8,61·	106	363	469	326	11,354	7,245	143	150	40	150	298	557	690	...	...	...	6	348	...	1
Gurgáon	1,263	12,354	55,341	67,695	59,877	7,818	68	324	392	299	5,699	4,969	93	309	11	1,257	232	1,052	1,220	...	...	...	270	4	...	2
Delhi	822	2,277	35,109	37,386	32,781	4,605	59	372	431	320	18,439	16,666	111	...	...	822	19	263	684	...	...	...	155	...	...	..
Karnál	1,440	5,936	54,365	60,301	50,696	9,605	331	357	688	242	25,990	14,870	446	...	...	...	78	395	1,358	...	...	...	64	...	...	...
Ambala	1,795	4,373	37,986	42,359	38,810	3,549	82	165	247	181	5,252	4,262	66	457	19	4,111	174	442	507	182	684	9	60	43	1	2
Simla	21	129	884	1,013	857	156	2	14	16	8	91	35	8	10	...	182	...	...	13	153	17	3	...	...	...	...
Kángra	718	1,182	27,118	28,300	27,396	904	137	453	590	511	2,866	2,576	79	329	41	497	70	248	289	256	227	12	489	...	...	...
Hoshiárpur	2,179	3,703	45,653	49,356	44,346	5,010	177	425	602	445	13,361	5,477	157	575	149	2,179	153	554	694	209	368	8	254	2	...	...
Jullundur	1,313	1,375	37,194	38,569	34,983	3,586	115	334	449	304	6,197	4,242	145	352	59	352	183	432	389	217	535	8	256	...	...	...
Ludhiána	905	1,866	27,259	29,125	26,777	2,348	50	160	210	165	4,842	4,044	45	244	87	323	161	380	624	165	268	6	82	...	...	5
Ferozepore	1,612	7,460	51,972	59,432	53,894	5,538	160	328	488	360	44,670	42,453	128	397	65	1,541	436	412	1,220	190	411	10	388	1	..	...
Montgomery	1,389	252	3,024	3,276	2,778	498	50	163	213	152	9,991	2,584	61	417	...	357	94	472	637	134	388	...	...	...	..	...
Lahore	1,659	1,817	19,045	20,862	18,070	2,792	104	196	300	179	14,222	10,121	121	450	51	444	374	825	689	64	82	3	10	54	...	...
Amritsar	1,675	2,670	27,827	30,497	27,804	2,693	149	328	477	371	14,114	12,375	106	284	23	1,072	179	432	537	126	280	6	30	21	18	8
Gurdáspur	2 365	4,320	56,192	60,512	53,639	6,873	141	191	332	174	9,740	7,304	158	1,214	219	1,405	167	520	682	120	401	7	...	...	...	...
Siálkot	2,524	3,676	37,100	40,776	34,179	6,597	101	203	304	216	13,468	12,527	88	535	257	2,282	679	777	599	170	475	10	103	1	...	6
Gujránwála	1,396	2,286	16,709	18,995	15,650	3,345	611	261	872	277	106,468	47,963	595	34	...	1,156	338	538	603	55	80	5	10	92	...	...
Gujrát	1,440	3,927	31,376	35,303	31,833	3,470	98	487	585	435	5,430	5,120	150	326	53	326	118	370	402	146	453	9	...	...	...	..
Sháhpur	533	774	9,187	9,961	8,937	1,024	66	119	185	125	138,376	14,625	60	140	43	533	266	211	259	131	212	8	...	...	...	...
Jhelum Colony	604	422	5,448	5,870	4,747	1,123	504	47	551	283	98,984	18,985	268	...	...	...	4	48	61	...	...	...	...	...	...	...
Jhelum	954	3,186	25,854	29,040	24,587	4,453	128	206	334	193	26,176	8,560	141	229	171	954	189	368	305	157	306	6	...	...	...	...
Rawálpindi	1,174	2,762	20,555	23,317	20,470	2,847	229	239	468	433	30,317	8,833	35	1,174	38	1,174	17	267	541	...	...	...	125	120	...	...
Attock	622	3,068	13,076	16,144	13,664	2,480	253	257	510	381	138,543	83 247	129	75	15	75	114	346	396	27	21	1	...	...	...	...
Miánwáli	608	5 337	24,405	29,74·	27,016	2 726	292	278	570	295	20,703	11,117	275	296	80	296	173	156	408	19	28	...	113	269	...	...
Lyallpur	1,331	1,080	14,343	15,423	13,526	1,897	19	53	72	49	4,390	1,215	23	308	3	308	103	134	552	127	254	5	18	208	...	3
Jhang	798	783	6,942	7,725	6 472	1,253	194	326	520	305	33,720	11 225	215	202	66	202	212	361	418	118	787	2	48	...	...	...
Multán	1,449	502	8 337	8,839	8 334	505	127	370	497	336	11 250	8,119	161	395	37	395	439	294	1,160	120	98	9	47	1	...	...
Muzaffargarh	769	1,261	10,766	12,027	10,783	1,244	325	477	802	679	8,294	2,934	123	205	81	205	421	480	1,440	177	309	7	64	10	...	6
Dera Gházi Khan	794	3,648	16,301	19,949	17,524	2,425	169	380	549	358	24,964	13,926	191	209	56	209	430	290	504	237	1,024	8	...	44	..	...
Total	35,073	89,222	800,152	889,374	782,935	106,439	4,971	8,305	13,276	8,698	894 196	4·3,82·	4,578	9,398	1,657	22,947	6,513	12,081	18,654	3,419	7,734	147	3,798	1,224	113	45

STATEMENT No. V.

ANNUAL EXPENDITURE ON THE PATWARI ESTABLISHMENT FOR THE YEAR ENDING 30TH SEPTEMBER 1907.

1	2	3	4	5	6	7	8	9	10	11	12	13
District	Total number of Patwaris, including Assistant Patwaris.	Salaries.		Stationery and Printing.		Patwari School.	Survey equipment.	Rewards and gratuities.	Other charges.	Total.		Remarks.
		Cost.	Annual average per head.	Cost.	Annual average per head.					Cost.	Annual average per head.	
Hissár	331	50,111	151	765	2	...	...	...	459	51,336	155	
Rohtak	242	32,951	136	2,630	11	51	282	...	1,049	36,963	153	
Gurgáon	332	42,896	129	3,004	9	2	...	...	937	46,839	141	
Delhi	227	35,016	154	2,929	13	...	...	...	167	38,112	168	
Karnál	353	47,640	135	4,779	14	...	...	980	543	53,943	153	
Ambála	381	50,543	132	838	2	94	...	...	418	51,893	136	
Simla	8	1,025	128	39	5	...	...	...	117	1,181	148	
Kángra	315	41,659	132	366	1	195	...	...	5,495	47,716	151	
Hoshiárpur	481	63,067	131	177	...	...	225	...	425	63,894	133	
Jullundur	402	51,436	128	1,087	3	...	...	...	404	52,927	132	
Ludhiána	307	39,991	130	1,693	6	113	8	...	256	42,061	137	
Ferozepore	378	53,755	142	1,174	3	...	...	...	457	55,386	147	
Montgomery	214	26,929	126	773	4	121	113	...	1,574	29,510	138	
Lahore	358	48,053	134	1,097	3	...	7	...	376	49,533	138	
Amritsar	325	46,112	142	1,271	4	...	390	...	367	48,140	148	
Gurdáspur	481	63,722	132	...	...	...	18	...	280	64,020	133	
Siálkot	425	59,411	140	1,809	4	13	...	150	1,487	62,870	148	
Gujránwála	364	47,357	130	551	2	...	298	...	2,545	50,751	139	
Gujrát	244	34,602	142	965	4	...	...	1,162	359	37,088	152	
Shahpur	146	9,116	62	642	4	...	...	...	211	9,969	68	
Jhelum Colony	157	18,824	122	1,240	8	...	49	...	333	20,446	132	
Jhelum	221	29,698	134	463	2	...	...	...	306	30,467	138	
Ráwálpindi	231	31,840	138	650	3	...	...	...	4,902	37,392	161	
Attock	214	29,604	138	1,378	6	...	183	...	302	31,467	147	
Miánwáli	205	25,792	126	2,473	12	165	...	...	677	29,107	142	
Lyallpur	316	40,298	128	9,496	30	...	...	...	652	50,445	160	
Jhang	209	28,487	136	1,362	7	...	...	...	464	30,313	145	
Multan	363	49,387	136	2,412	7	...	68	...	383	52,250	144	
Muzaffargarh	285	39,644	139	1,723	6	147	399	...	540	42,452	149	
Dera Gházi Khan	191	26,190	137	123	1	52	8	...	247	26,621	139	
D. L. R.'s reserve	...	...	...	5,673	...	...	267	...	3,903	9,843	...	
Total	8,706	11,65,156	134	53,582	6	953	2,315	2,292	30,635	12,54,935	144	

PUNJAB LAND RECORD DEPARTMENT

REPORT FOR 1908.

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REPORT

ON THE

OPERATIONS OF THE DEPARTMENT

OF

LAND RECORDS,

PUNJAB,

For the year ending the 30th September 1908.

Published by Authority.

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1909.

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No. 102 (Rev. & Agri.—Rev.).

FROM

W. S. HAMILTON, ESQUIRE,

Offg. Secretary to Government,
Punjab and its Dependencies,

TO

THE SENIOR SECRETARY TO THE
FINANCIAL COMMISSIONER, PUNJAB.

Dated Lahore, 17th March 1909.

Revenue and Agriculture.
Revenue.

SIR,

I am directed to acknowledge the receipt of the annual report on the Land Record department which was submitted with your letter No. 103 of 17th February 1909. The report reached Government late last year, and this year is later still, being over a month behind time. The Lieutenant-Governor hopes this delay will be avoided in future.

2. Sir Louis Dane is glad that the Financial Commissioner and the Director of Land Records are able to contemplate with satisfaction the conduct and intelligence of the subordinate revenue staff and to congratulate themselves on the general excellence of the land records. Our system of land records is admirable, but its complexity serves to cloak the laziness or dishonesty of the bad patwari, and if there is any slackness in the supervision, if the Collector omits to test the work of any patwari himself while on tour, or if the sadr kanungo is detained at head-quarters or makes superficial inspections, or if the Revenue Assistant is overburdened with excise, land acquisition or other work, which keeps him from his more special revenue duties, the records easily slip into a deplorable state. Constant watchfulness of detail and especially the improvement of the kanungo staff by careful selection and elimination of the unfit are the matters on which attention should be kept fixed, so that the mutation proceedings may be fully justified as a basis for an accurate record of title.

3. It is very doubtful whether, as the Director of Land Records suggests the selection of patwaris for the post of kanungo involves the sacrifice "of efficiency as an abstract ideal," for most settlement officers would probably admit that the patwari, if taken when still young and ambitious, makes a better kanungo than the entrance passed candidate. For this reason the Lieutenant-Governor hesitates to accept the proposal to appoint naib tahsildar candidates to be kanungos. These candidates would doubtless reap benefit themselves, but the land records would suffer through their inexperience and want of permanence. In any case the kanungos appointed from among the naib tahsildar candidates would have to be in substitution for, not in addition to, the kanungos appointed under Land Revenue Rule 103 (*iii*).

4. The question of raising the patwaris' pay has again been before the Lieutenant-Governor in connection with the Rohtak district. Want of money bars the way, as since the patwari cess was abolished there is no longer an automatic increase in the patwar fund to meet an increase in the work of each district. The likeliest means of overcoming this difficulty is to reduce establishments in numbers, or at least to prevent their increase, by the reduction of unnecessary work and the simplification of forms and returns wherever this is possible.

5. The Lieutenant-Governor hopes that in all districts, especially in those pilloried in paragraph 20 of the report, the Revenue Assistants and also the Deputy Commissioners themselves will personally attest a sufficient number of jamabandis to enable them to judge of the land record work of their districts and to keep the zeal and energy of the kanungos alive.

6. The transfer of the abstract village note-books from the tahsils to the sadr revenue offices should be separately considered by the Financial Commissioner.

I have, &c.,

W. S. HAMILTON,

Offg. Secretary to Government, Punjab.

Punjab Government Press, Lahore—30-3-09—960—335—C. L.

No. 103.

FINANCIAL COMMISSIONER'S OFFICE.

Dated LAHORE, *the* 17*th February* 1909.

FROM

E. R. ABBOTT, ESQUIRE,

Senior Secretary to the Financial Commissioner, Punjab,

To

M. W. FENTON, ESQUIRE,

Chief Secretary to Government, Punjab.

SIR,

I am directed to forward a copy of a letter No. 82, dated 11th January 1909, from the Director of Land Records, covering his annual report on his Department, for the year ending 30th September 1908, with a separate note containing the comments of Financial Commissioner.

I have, &c.,

E. R. ABBOTT,

Senior Secretary to the Financial Commissioner, Punjab.

Comments by the Hon'ble Sir James Wilson, K.C.S.I., Financial Commissioner, Punjab, on the Annual Report of the Director of Land Records, Punjab, for 1908 dated 8th February 1909.

THE high proportion of insufficiently-educated men, especially of the non-agricultural classes, who are being admitted to the register of patwari candidates is not quite satisfactory, and, taken with the difficulty experienced, in Lyallpur and elsewhere, of getting suitable candidates, seems to the Financial Commissioner to be some evidence that the pay and prospects of the appointment of patwari do not attract the class of men required. Once a man has got on to the register of candidates, it is difficult to get rid of him, and Deputy Commissioners should endeavour to see all candidates for themselves and admit only those who are qualified under the rules and are likely to make good patwaris and to stay contentedly for years in the same circle. They should also pay greater attention to an adherance to the rules as regards the number of candidates to be admitted to the register. The steady increase in the percentage of patwaris who have passed the Middle School Examination is satisfactory: it is now 39 per cent. The present percentage of men who belong to agricultural tribes is only 27, but, as 48 per cent. of the candidates belong to those tribes, this percentage is likely to improve. In most districts we may be content with ultimately having half the patwaris drawn from the true agricultural classes, as it would not be fair to debar the old hereditary patwari class altogether from these appointments, in which many of them too do useful work.

2. How little the work of kanungos and patwaris can be gauged from mere numerical data can be judged from the figures given in Statement I of the report. The number of fields in a kanungo's charge range from 154,770 in Jullundur to 32,625 in Hissar, and the number of *khatauni* holdings from 49,896 in Amritsar to 7,443 in the Jhelum canal colony. In the case of patwaris the number of fields varies from 7,187 in Lyallpur to 1,599 in Hissar, and the number of *khatauni* holdings from 2,551 in the Sialkot district to 480 in the Jhelum canal colony. As each district comes under settlement endeavour is made to equalise the true amount of work to be done by the patwari in each circle, and this object should be steadily kept in view. The average patwari has not more to do than he can get through without difficulty in ordinary times, and his work is of the greatest value not only to the State but to the land-holders, the security of whose title is greatly enhanced by the constant attention paid to the duty of keeping the record-of-rights in the land accurate and up to date. It would be a mistake to suppose that the patwaris are everywhere unpopular: it is probably more true to say that the services of the majority of them, both those they perform in obedience to rules and instructions from above, and those they render unofficially to the illiterate peasants, are appreciated by the people; who readily, sometimes too readily, give their patwari a small douceur for the help and advice he has given them. Cases in which this douceur is extorted or is really of the nature of a bribe are comparatively rare. The custom is a relic of the time when the patwari was a servant of the village community and paid by them, and it can only be put down by close supervision, and by enhancing the patwari's pay to a rate which both they and the villagers will consider sufficient remuneration in itself for all the work they do. As the Director shows, the percentage of patwaris dismissed for misconduct or neglect of duty is really small, and Sir James Wilson believes that, all things considered, the patwaris as a whole perform their important duties, which are often of an arduous or delicate character, with wonderful honesty and efficiency, and that the resulting agricultural statistics and record-of-rights in our millions of holdings are much more accurate than in most Provinces of India, and can be matched in very few countries in the world.

When we consider this result and all its value, direct and indirect, to both Government and people, we should not forget that it depends on the sometimes ill-requited labour of the humble patwari.

3. The proposals as to patwarkhanas which have been received from the Director are still under the consideration of the Financial Commissioner. The problem is a difficult one. An undertaking by Government to provide free of cost a residence for each patwari would be very expensive, but on the other hand the rule that a patwari shall live within his circle is a most important one, and in the circles where the patwari cannot hire a suitable house there appears to be nothing for it but to provide one at Government expense, as has already been done in the Chenab colony, and is being done, as funds become available, in the Kangra district and the Jhelum colony. The Financial Commissioner hopes to be able to submit his proposal to Government shortly.

4. Much of the efficiency of the revenue records depends upon the field kanungo. An inefficient or lazy patwari can be set right by the kanungo whose main duty it is to see that his patwaris do their work. Neither the Tahsildar nor Naib Tahsildar in districts not under settlement can give more than a portion of his time to the supervision of the kanungo's work, and, as remarked by Mr. Barron, it is exceedingly difficult to say whether a field kanungo is carrying out his duties properly. It is therefore undesirable that untrained men should be put in charge of kanungos' circles and Entrance-passed candidates should never be given appointments until they have shown their fitness for the work, if possible, in a settlement. The suggestion to put Naib Tahsildar candidates simultaneously on the list of candidates for kanungoships is a good one: but the Financial Commissioner would go further and urge Deputy Commissioners to give all Naib Tahsildar and Tahsildar candidates permanent posts of some sort as soon as possible, that they may obtain continuous employment and begin their pensionable service.

The kanungos as a whole are a very useful and efficient body of men. There is much truth in what the Director says as to the comparatively small number of kanungos, especially among promoted patwaris, who can hope to rise to anything higher, and, from this point of view, a case might be made out for an improvement in the pay of the whole body of kanungos, especially in the higher grades.

5. The figures given for mutations by the Director in paragraph 21 are interesting and striking. For the increase in the volume of work many reasons suggest themselves: increase in population and cultivation, especially in the canal colonies; in some districts excessive mortality from plague and fever; extensions of the system of fluctuating assessments, which must in itself lead to more prompt mutation of names. There is also little doubt that as time goes on fewer mutations escape being brought to record at the time and this in itself, while it increases the amount of current work, will tend to reduce the labour involved in the periodical revision of the records which takes place at settlement. As stated by Mr. Barron, the Financial Commissioner has received a favourable report from the Commissioner of Lahore, on the result of the plan of making the extra Naib Tahsildar do tahsil work while the permanent men clear off the mutations. The plan, however, is unpopular with the permanent Naib Tahsildars themselves owing to the supposed loss of status involved.

6. The Financial Commissioner agrees with the Director that there has been a steady improvement in the quality of the land record work, and that the peasant landowners of the Province rightly show great confidence in the entries made, which they find add to the security of their title and the value of their land. While, no doubt, in some districts the attestation work has been done too hurriedly or carelessly (and he hopes the Deputy Commissioners concerned will pay attention to the Director's remarks on this subject), Sir James Wilson believes that on the whole it is done with fair accuracy, and that the people concerned are made generally aware of the effect of the orders passed. He has recently submitted proposals with the view of making attestation proceedings more summary and of encouraging the attesting officer to refrain from making elaborate enquiries which should be left, in cases of dispute, to the Civil Court.

If those proposals are accepted, it will not be necessary to make any large increase in the number of attesting officers. It will be sufficient to give temporary help, as at present, where the state of the arrears requires it.

7. One of the most important duties which is carried out by the land records agency is the drawing up of partition proceedings. It is true that in many parts of the Province holdings are very minutely subdivided, but from the figures given in Statement IV the average area dealt with in a partition case is about 70 acres for the Province, and was as high as 230 acres in Attock. The majority of landowners in the Province possess shares in scattered joint holdings, and the success that Mr. I. C. Lall, Mr. Hailey and Mr. Abbott have achieved in *killabandi* proceedings in the direction of straightening field boundaries and consolidating holdings shows that the people generally are alive to the advantages of consolidated holdings and confident of the ability of the revenue agency to carry through the necessary proceedings. Much can be done everywhere to assist the people themselves to consolidate their properties by reducing the cost of partitions and carrying them through expeditiously and also by removing unnecessary restraints on exchanges. The Financial Commissioner thinks that every encouragement should be given to the owners of scattered holdings to bring them within a ring-fence, as this makes it much more easy for a man of greater diligence and enterprise than his fellows to introduce improvements in his system of agriculture.

8. Sir James Wilson desires to repeat his appreciation of the general excellence of the land record work done by all grades of the revenue staff, from the Deputy Commissioner to the patwari, and of the great value of its results both to the administration and to the individual owner and cultivator of the land.

No. 82.

Dated 11th January 1909.

FROM

C. A. BARRON, ESQUIRE,

Director of Land Records, Punjab,

To

E. R. ABBOTT, ESQUIRE.

Senior Secretary to the Financial Commissioner, Punjab.

SIR,

I HAVE the honour to forward herewith for favour of review and transmission to the Local Government seven advance copies of the report on the Department of Land Records, Punjab, for the year ending 30th September 1908.

I have, &c.,

C. A. BARRON,

Director of Land Records, Punjab.

ANNUAL REPORT

OF THE

DEPARTMENT OF LAND RECORDS, PUNJAB.

For the year ending 30th September 1908.

Chapter I.—Prefatory.

Personal. Tours.

1. The post of Director of Land Records was held by Mr. W. S. Hamilton from the 1st October 1907 until the 6th July 1908 and from that date until the end of the year under report by Major A. C. Elliott. Sheikh Amir-ud-din and Malik Zaman Mehdi Khan were the Personal Assistants throughout the year except for 5 weeks during which the latter took privilege leave. Mr. Hamilton and Major Elliott spent 164 days on tour, and inspected 7 head-quarter and 20 tahsil offices. The two Personal Assistants between them were in camp for 453 days and inspected 10 head-quarter and 55 tahsil offices. This is a great increase on the amount of inspection work done in previous years. Besides the inspection of Revenue offices the Personal Assistants checked the girdawaris and examined the patwari's papers of several villages on the spot. In addition to inspecting revenue records the Director and his Assistants have to visit or inspect registration offices, factories and mines, work which does not appear in this report. M. Zaman Mehdi Khan was able to inspect as many as 34 tahsils. Settlement operations were in progress in six of the districts in Sheikh Amir-ud-din's circle, so that he had not so much scope for purely land record work.

Strengthening of tahsil establishments.

2. Orders have now been passed in all the cases pending at the end of last year. In the last four years 29 extra muharrirs and eleven accountants have been entertained. For the present at any rate the requirements of the tahsils as regards office establishment have been met. A report was furnished to the Financial Commissioner on the revision of the strength of the tahsil chaprassi establishment, and his orders are awaited.

Naib Tahsildars' Examination.

3. This examination was held in August in the New University Hall. Out of 79 candidates from the Punjab and 15 candidates from the North-West Frontier Province, 54 passed or completed the examination and 26 were partially successful. These results show a considerable improvement on those of the previous year.

Chapter II.—Land Records Establishment.

Patwari candidates.

4. During the year 812 new names were placed on the register of candidates as compared with 827 in the previous year. Of these 452 belonged to agricultural tribes and of this number 325 were Muhammadans. On the other hand among the 360 non-agriculturist candidates the Hindus, as one would expect, predominate and number 286. The district reports show that Deputy Commissioners are alive to the necessity for securing suitable candidates with proper educational qualifications. They find themselves hampered, naturally enough, by the backward state of education among the agricultural population. Consequently 221 of the newly accepted candidates of this class had not passed the Middle School Examination. At the same time the proportion of insufficiently educated candidates from non-agricultural classes—124 out of 360—seems unnecessarily high. In several districts too great leniency has been shown in this matter, but especially so in Mianwali where as many as 33 non-agriculturist,

and 37 agriculturist candidates were accepted though not qualified educationally. The Deputy Commissioner has not explained why it should have been necessary to raise the number of candidates to 131 when the number of sanctioned patwarships is only 249, and under ordinary circumstances 80 or 90 candidates would be quite sufficient. As 128 out of the 131 candidates have passed the patwari examination it would appear that all the men who worked in the late settlement, and passed an examination held at the end, were indiscriminately entered on the list, which is now much too large.

Considerable difficulty is experienced in Lyallpur in getting any candidates at all, owing to the expense of living and the fact that the district is not the home of such applicants as do come forward. Some slight difficulty in getting suitable candidates, especially of the agricultural classes, is reported from Hissar, Rohtak, Karnal, Gujranwala, Jhang and the southern tahsils of Ferozepore.

The total number of patwari candidates on the list last year was 2,862; it is now 2,709 or slightly below the 33 per cent. standard prescribed in 1905. The districts in which the number is most deficient are Hoshiarpur, Jullundur, Sialkot and the Jhelum Colony. The great excess in Mianwali has already been noticed. The other districts where the number is above ordinary requirements are under settlement, or just about to be re-settled, *e.g.*, Ludhiana.

Candidates belonging to agricultural tribes now number 48 per cent. of the whole as against 43 per cent. last year. But though this may be considered satisfactory the improvement is unfortunately accompanied by a deterioration in educational qualifications. Only 61 per cent. of this year's candidates have passed the Middle School or higher tests as against a proportion of 64 per cent. last year and 68 per cent. in 1905.

Nearly three out of every four candidates have passed the patwari examination.

Patwari schools.

5. Patwari schools were opened in the districts of Gurgaon, Karnal, Umballa, Jullundur, Ferozepore, Amritsar, Gujrat and Jhelum. Examinations were also held in Hissar and Delhi which are under settlement and also at Simla. Even in some of these districts the proportion of unpassed candidates seems unduly large, and the lists appear to require weeding out. This year it is proposed to open schools in Montgomery and Gujranwala, and one seems to be required in Lahore, and an examination should be held in Rohtak.

New appointments of patwaris.

6. Of the 378 patwaris appointed during the year 218 were Hindus and Sikhs and 160 were Muhammadans. Of the total 146 were agriculturists. The majority of the Deputy Commissioners and Settlement Officers have been able to give a fair proportion of the vacancies to agriculturists, but in Karnal and Jhang where there were 9 and 6 vacancies, respectively, all fell to non-agriculturists, and in Kangra and Amritsar out of 13 and 11 appointments only one in each district and in Gujranwala only 3 out of 17 were given to agriculturists.

In Lahore and Lyallpur one man each and in Gujranwala as many as 8 men were appointed without having passed the patwari examination. The appointments should be regarded as provisional only under rule 9 (iii).

Patwari establishment.

7. The strength of the patwari staff has risen by 89 from 8,706 to 8,795. The increase of 44 in the Mianwali establishment was mentioned in last year's report. In Rohtak and Jullundur sanction was given to the entertainment of 16 extra assistant patwaris each and of 10 such men in Delhi. In Ambala two new posts of patwaris were created and in Kangra one.

Of the present staff 27·4 per cent. belong to agricultural tribes and 41 per cent. have passed the Middle School or other higher examination. The figures given in the margin show that the men's educational qualifications are gradually but steadily improving. But they also show that the efforts constantly made to secure a larger proportion of men whose hereditary occupation is

	Passed the Middle School or higher examination.	Belonging to agricultural tribes.
1903-04	35 per cent.	29 per cent.
1904-05	36 „	27 „
1905-06	38 „	27·7 „
1906-07	39 „	27 „

agriculture are not meeting with the success one would expect. The reason probably is that with agricultural education in its present condition simultaneous attempts made in these two directions must defeat each other. With all the good will in the world Deputy Commissioners and Settlement Officers cannot be expected to give the preference continually to ignorance or stupidity backed though they may be by a sometimes very doubtful claim to an agricultural status.

Efficiency of patwaris.

8. The district reports give on the whole a very favourable account of the efficiency and conduct of the patwaris. Considering their low pay and the continuous raising of the volume and standard of work required of them, not to mention the strain on their honesty in the increasing number of districts with fluctuating assessments of more or less complexity, it is, as one Deputy Commissioner puts it, surprising how successfully they work. There is no doubt that with the increase in the demands made upon them in recent years the ability of the general body of patwaris has risen very considerably. To this the constant weeding out process which takes place when a district comes under settlement contributes in no small measure. The old and generally incompetent hereditary patwari is rapidly disappearing.

It is evident that the activity displayed in taking stern measures against inefficient or dishonest men varies greatly in the different districts. A number of such men probably escape punishment owing to the difficulty of proving the charges against them or the trouble involved in making the attempt. The figures in Statement III show that during the year 170 patwaris were dismissed, but I notice that in some districts men retired for old age including some who received gratuities, men who resigned, and even men who have died, have been included in these figures. As far as I can make out the number of patwaris dismissed for misconduct or neglect of their duties was only 111. The offences alleged against them included forgery, bribery and corruption, but the majority were discharged for incompetence, neglect of duty and absence without leave. In four cases only were patwaris convicted under criminal charges-two for forgery in Hoshiarpur, one for bribery in Muzaffargarh and one in Mianwali for misusing service stamps. As the real dismissals only amount to $1\frac{1}{4}$ per cent. of the total strength of 8,795 men, some support is lent to the theory that the work done by the patwaris is on the whole satisfactory.

In this connection the Deputy Commissioner of Lyallpur thinks that two patwaris—revenue and canal—are not required in his district; one man could do the work of both; he would be better paid and the post would be more sought after, while the people would be relieved of an undue tax. The Commissioner quite agrees with the Deputy Commissioner.

Promotion of patwaris.

9. During the year there were only 42 vacancies in the kanungo staff, of these 26 fell to patwaris which is practically the proportion prescribed by Land Revenue Rule 103 (*v*). Curiously enough all the vacancies in the districts under settlement in the Delhi Division fell to Entrance passed candidates. This only emphasises the impossibility of drawing conclusions in a matter of this sort from the figures of any given year. When only one or two vacancies occur in a district in a year the promotion of one class of candidates or the other may only be dictated by a desire to maintain a proper equilibrium, but statistically may present the appearance of a disregard of the rules by as much as 100 per cent. There are few district officers or settlement officers who are not anxious to do what they can within reason for the patwaris by giving them promotion even at the expense sometimes of efficiency as an abstract ideal.

In addition to the 26 kanungoships on district staffs patwaris received 13 posts of *wasil baqi nawis* and *siah nawis* and 13 miscellaneous muharrirships besides a number of settlement kanungoships which do not appear in this report.

Gratuities to retiring patwaris.

10. In column 9 of Statement No. V a sum of Rs. 17,450 is shown as having been given to patwaris in the shape of rewards and gratuities. It is evident from the district reports that in some cases only the amount granted to retiring patwaris as gratuities has been entered while in others (both

districts under and not under settlement) a number of miscellaneous rewards have been included. The best estimate I can frame from the figures is that about 100 men retired voluntarily or under compulsion and received gratuities averaging roughly Rs. 130 each. This leaves a little over Rs. 4,000 granted in miscellaneous rewards. This is an enormous increase on the figures in last year's report, but as explained then there were a number of cases pending from previous years.

Though it has been decided for the present that patwaris are not to be granted pensions, it is, I imagine, merely a question of time until they are brought on to the ordinary footing of men paid from Government revenues. It will help in deciding the question when it arises, if District Officers are instructed to show clearly in their reports the exact number and amount of the gratuities given on retirement to patwaris.

Patwarkhanas and the residence of patwaris.

11. The abnormally heavy rains of the past summer have to all intents and purposes decided for us the question of the maintenance of patwarkhanas. In Hoshiarpur, Shahpur and Rawalpindi the houses are reported to be in ruins and half those in Sialkot are in the same condition. Fourteen other districts report their patwarkhanas as in various stages of dilapidation, and reference is made to the difficulty of keeping them in repair. In eight reports the subject is not mentioned though some of them must have suffered considerably from the rains. In only one district (Ludhiana) is the epithet "satisfactory" applied to the state of the patwarkhanas. In Simla they are being repaired and in the Jhelum Colony they are about to be built from public funds, while in Kangra Government has already sanctioned the rebuilding of the houses demolished in the earthquake.

Proposals for changing the existing rules regarding the maintenance of patwarkhanas were submitted to the Financial Commissioner in February last, and it is to be hoped that this subject, which has now become really urgent, will receive early attention.

Residence with their families within their circles is generally enforced on patwaris by Deputy Commissioners and many are the devices by which they endeavour to secure obedience to their orders. But the reports disclose a natural feeling that, as long as no suitable accommodation is provided, it is rather hard to insist on a patwari rebuilding a ruin if he cannot hire a decent house in the village.

Cost of patwari establishment.

12. Statement No. I is a quinquennial return. It was last prepared for the report for 1902-03. A revised statement is therefore furnished this year. Five years ago the number of patwaris' circles in the province was 7,906, it is now 8,343.* The increase in the number of circles has followed the increase in cultivation which has taken place in this period. In 1903-04 each circle covered 7,110 acres, of which 3,350 acres were cultivated and paid an assessment of Rs. 3,270. The corresponding figures now are—total area 6,850 acres, cultivated 3,380 acres and assessment Rs. 3,310. Five years ago each patwari looked after 4,480 fields and 1,260 khatauni holdings, and he now is in charge of 4,735 fields and 1,330 khatauni holdings. So that in spite of the increase in the staff the work required from each man has in this, as in other departments, slightly increased. The average amount spent last year in salaries in each circle was Rs. 146-8-0 or 16 shillings and 3 pence a month, as compared with Rs. 145-8-0 or 16 shillings and 2 pence a month five years ago. It is rather startling to think that we get the amount of work we do out of men paid at less than £10 per annum, and that our elaborate system of land records and all our agricultural statistics depend on the honesty of such a lowly paid body of officials. If we include the assistant patwaris the average salary is only Rs. 11-8-0 a month. Patwaris have in addition a steady income of about Rs. 18 per annum each from fees for entering mutations and giving copies, etc., but even so it is difficult to regard the acceptance by them of doles of grain, wood, and grass from the villagers, such as are more or less customary everywhere, in the light of serious extortion. Without such assistance I doubt whether we would now-a-days obtain any men at all of the standard we endeavour to get.

*Assistant patwaris are excluded.

The total expenditure on the establishment including stationery, survey equipment, gratuities and other charges, was Rs. 13,49,242, at the average rate of Rs. 162 per circle. This shows an increase of Rs. 84,307 over the expenditure last year which should have been given as Rs. 12,64,935. The principal items contributing to this increase are—salaries Rs. 37,000 due to increase of the establishment and the payment of famine allowances; Rs. 15,700 for stationery and printing; Rs. 15,000 for rewards and gratuities, as already explained; and Rs. 6,600 under "Other Charges," chiefly owing to the rebuilding of the Kangra patwarkhanas.

Kanungo candidates.

13. Further progress was made in the measures mentioned last year taken to reduce the overgrown list of kanungo candidates. There are 591 kanungos in the province so that excluding the requirements of settlements a list of about 300 candidates of whom 200 should be patwaris should suffice. Last year there were 467 accepted candidates. Of these 42 obtained appointments and 73 names were struck off. To replace these 81 new names only were accepted, leaving the number of candidates at the end of the year 433. In many of the districts, notably those in the Jullundur Division, the candidates' register was closed for the time being. Leaving out districts under settlement the lists are still much too large in Kangra, Jullundur, Gujrat, Jhelum and Mianwali. In Kangra and Jhelum there are actually more candidates than there are posts. In Jullundur, and Gujrat no new candidates were accepted during the year, and it seems to have been unnecessary to accept as many as 9 new names in Mianwali and 8 in Gujranwala. Lahore on the other hand with only 8 candidates (of whom only 2 have passed the examination) for 23 posts seems to have a difficulty in the other direction.

Of the 81 new names brought on to the list 44 were patwaris and 27 belonged to the agricultural classes. Of the 42 men appointed kanungos 26 were patwaris and 20 agriculturists. The appointment of patwaris to two-thirds of the vacancies is, it is evident from the reports, carefully borne in mind by Deputy Commissioners. The proportion of patwaris and agriculturists on the registers of candidates improved slightly owing to these changes. A large number of the district candidates are under training or acting as kanungos in settlements.

Qualifications of kanungo candidates.

14. Enquiries have been made regarding the acceptance of men not qualified under the rules. Of the 433 candidates, 354 have passed the Middle School or higher examinations. Of the remainder 65 had been appointed patwaris before 1897 and were, therefore, eligible under note (2) to Rule I in Punjab Government Notification No. 245, dated 12th February 1902, but the other 14 should not have been accepted without the Financial Commissioner's sanction. This has now been granted in two cases; the others are still under enquiry. Two similar cases of the acceptance of non-patwaris who had not passed the Entrance Examination occurred this year, but both have since been sanctioned by the Financial Commissioner. One simple method of not further congesting the list is to refuse to listen to irregular applications. In this respect, I am afraid, Settlement Officers are somewhat to blame.

Kanungos' examinations were held by the Personal Assistants at Delhi, Hissar, Amritsar, Jullundur, Multan, Rawalpindi and Peshawar. One hundred and sixty-five candidates from the Punjab and North-West Frontier Province appeared, and 104 were wholly and 18 partially successful. Certificates of efficiency were granted to 113 men during the year. The number of Punjab candidates who have passed this examination is now 320, of whom 290 hold certificates of efficiency.

Kanungo establishment.

15. The number of kanungos employed last year should have been shewn as 589, a mistake having been made in shewing 27 instead of 22 men in Hissar. This year two Kanungoships were reduced in the Jhelum Colony and inspection muharrirs were substituted for the 2nd assistant sadr kanungos in Umballa, Kangra, Ferozepore, Sialkot and Multan. An increase of two field kanungos each was sanctioned for the Lahore and Gujranwala Districts and of five field kanungos for Mianwali to cope with the extra work of a fluctuating assessment. The present number of posts is 591.

Efficiency and conduct of kanungos.

16. Most of the Deputy Commissioners seem to be satisfied with the work done during the year by the kanungo staff and describe the men as efficient and fairly capable. The duties of the field kanungos are such that it is notoiously difficult to say with certainty how thoroughly they are being carried out. However, I think that with some exceptions the above opinion may be accepted as correct. But the field kanungos in Hoshiarpur and Jullundur are said to be very poor; the Deputy Commissioner of Lyallpur describes the work of the men as disappointing, and in Jhang they are lazy and careless. Why the field kanungos in Mianwali should be as bad as the Deputy Commissioner says they are, seeing that a Settlement has just been concluded there, it is difficult to understand.

Judged by the standard of severe punishments actually inflicted the kanungos do not come out very badly. Four men were reduced and one dismissed for incompetence, two were reduced for irregularities and two were dismissed for dishonesty. The last four cases all occurred in Mianwali. Excluding that district five reductions and dismissals, which are all that are mentioned in the reports, out of 565 men seems to be a fairly satisfactory record considering all the circumstances, and I trust that Government will regard it as such.

Promotion of kanungos.

17. Column 6 of Statement III A shows 11 kanungos as having been promoted to Naib-Tahsildarships or higher appointments, but this does not exhibit the facts quite correctly. The sadr kanungo of Montgomery was made a *sub. pro-tem.* Tahsildar. Eight kanungos became Naib-Tahsildars, five permanently and three *sub. pro-tem.* Of the four vacancies in sadr kanungoships three were given to kanungos, one of whom had been absent for some time doing the responsible work of a Deputy Superintendent in the Patiala Settlement, while the fourth was filled temporarily by a Settlement Naib Tahsildar candidate merely because the Settlement Officer had no kanungo fit for the appointment. Two kanungos were promoted to the post of reader to the Revenue Assistant, and one became Excise Darogha in his district. So that not counting numerous temporary officiating appointments, 15 practically permanent promotions went to kanungos. In addition to this, I have no doubt that many kanungos employed in Settlements were promoted to higher posts.

A good deal of misplaced sympathy is to my mind wasted year after year in bemoaning the poor prospects of kanungos. As long as Government insists, and quite properly, that the majority of kanungos shall be promoted patwaris, it follows that the number of kanungos from whom selections can be made for higher posts is reduced in almost equal proportion. It is only the very exceptional patwari, and even he is probably a "gentleman ranker" if one may use the term in this connection, that has any reason to hope to rise above the post of office kanungo. For higher posts, Deputy Commissioners and Commissioners must be at liberty to look for men of higher class and better qualifications.

The other aspect of the case is presented by a suggestion made by the Commissioner of Rawalpindi that Naib Tahsildar candidates trained in Settlements should, when possible, be employed as kanungos while waiting for appointments as Naib Tahsildars. To obviate the difficulty of arranging this without disappointing other suitable candidates he would be inclined to make it a condition of acceptance of a man as a Naib Tahsildar candidate that his name should be simultaneously put by the Deputy Commissioner on his list of kanungo candidates. The proposed employment would save many a trained Naib Tahsildar candidate from loafing about doing nothing for considerable periods besides training him further, and these advantages would more than compensate for the slight reduction in the chance of the ordinary "Entrance-passed" candidate.

Sadr kanungos.

18. The work done by sadr kanungos is in most districts reported to be good or satisfactory though in a few it is only fair. But the Deputy Commissioner of Ferozepore is not satisfied with his sadr kanungo. The touring done by these officials in districts not under settlement is on the whole adequate. But, in Lahore, Amritsar, Gujranwala and Attock the sadr kanungo spent less than one-third of the year on inspections. The explanation given in Ambala

for the sadr kanungo's spending only 76 days on tour, that there were frequent changes in the incumbency of the post, hardly seems sufficient. In Mianwali the sadr kanungo was absent from head-quarters for eleven days only in the year; perhaps if he had spent more time inspecting them the work of the kanungos and patwaris would have been better.

Government in its letter No. 188 (Revenue), dated 19th October 1907, sanctioned the provision of a tent and a chaprassi for sadr kanungos from the 1st April 1908 and also raised the travelling allowance admissible from eight annas to one rupee a day. This will probably result in more real touring as distinct from a day's run out and back from head-quarters, and consequently better inspections.

Several Deputy Commissioners state that efforts have been made to comply with the instructions issued in accordance with paragraph 6 of the Government Review of last year's report. No very clear account is given of the effect in reducing the connection of the record room staff and of patwaris generally with the Civil Courts and litigation.

Chapter III.—Utilisation of Land Records (See Statement IV).

Records-of-rights.

19. The condition of the permanent records-of-rights is generally reported to be good. In Hoshiarpur rats damaged the binding of some records. In Amritsar they suffered from leakage during the heavy monsoon rains. In Sialkot the backing of the genealogical trees of the settlement of 1865 is in progress.

New records-of-rights were completed and filed for the Rewari Tahsil of Gurgaon, the Chunian Colony of Lahore, the proprietary villages of the Jhelum Colony in Shahpur and the *abádis* of the Rakh Branch of the Chenab Canal in Lyallpur. In Muzaffargarh the entries made at the recent settlement in over a 100 villages regarding proprietary rights in the village common land were found to be misleading and incorrect; steps were, therefore, taken to revert to the entries made at the regular settlement, and so save the people from endless litigation. In Ferozepore the ravages of plague have rendered the genealogical trees of the Settlement Records so out of date that the Collector has ordered their revision along with the next quadrennial jamabandis of each village; the measure has the full approval of the Commissioner.

As to accommodation, plans are being prepared for the extension of the revenue record room in Ludhiana, and the question is under consideration in Karnal and Gurdaspur. In Jhelum the separation of the revenue records has been completed, but in Umballa owing to damage from white ants the records have been removed to the general record room.

Annual records.

20. The number of detailed jamabandis prepared this year was 9,049. On the whole they were filed punctually and duly attested by the kanungos and Tahsildars or Naib-Tahsildars. Opinions vary as to the thoroughness of this attestation, and it is certainly a part of the kanungo's duties which can very easily be slurred over. However, the Commissioner of Lahore thinks that the standard of maintenance of village records has improved greatly in recent years, and I imagine most revenue officers would agree with him. He adds also that if the records are to be maintained really well, the revenue agency and especially the kanungo agency may have to be strengthened. The Commissioner of Rawalpindi arranged that in the Shahpur District the jamabandis made this year are not to be filed in the district office till March, so as to give the Tahsildars and Naib-Tahsildars full opportunity of attesting them on the spot. He thinks this should be the rule everywhere, as under the present rule of filing them in January the possibility of genuine loyal attestation is curtailed, and Deputy Commissioners and Commissioners touring in February or March have no opportunity of checking this important branch of work. There is a good deal to commend this change in procedure, provided it did not lead merely to procrastination.

Probably the genuineness of the attestations made by the subordinate staff depends to a great extent on the amount and thoroughness of the checking done on the spot by the Revenue Assistants. A great deal of work was done in this way by the Revenue Assistants of Sialkot and Hoshiarpur, especially the former. Gurdaspur, which shows a good outturn, was under settlement. But in Umballa, Kangra, Jullundur, Ferozepore, Montgomery, Amritsar, Attock, Mianwali, Lyallpur, Multan and Dera Ghazi Khan, the amount of inspection by superior officers was lamentably small, while in Gujranwala, the Jhelum Colony, Rawalpindi and Muzaffargarh it would appear that this duty has been entirely neglected. The returns for the last-mentioned districts may be wrong, but when this superior checking can vary from 339 jamabandis in Sialkot to 10 in Umballa, it is no wonder that the zeal displayed by the subordinate staff fluctuates to an even greater extent.

The work of checking crop inspections was carried out on a large scale as usual. Statistics on this point are perphaps apt to be misleading, but the Tahsildars, and their Naibs in Montgomery, Gujrat, Rawalpindi and Lyallpur seem hardly to have done as much in this way as they might.

Mutation work.

21. This year the enormous number of 851,000 mutations were entered up in the patwaris' registers. The great increase in this class of work in the last five years is exhibited by the figures quoted in the margin. Part of this increase is fictitious, because in the earlier years a large part of the settlement establishment was employed in the North-West Frontier Province, whereas this year we had six settlements in full swing in the Punjab. But though that affects the provincial total it has no bearing on the increase in individual districts settled years ago.

New mutations.	
1903-04	607,252
1904-05	714,696
1905-06	725,874
1906-07	800,152
1907-08	851,088

There were 106,739 mutations left over for disposal from last year, and orders were passed in 845,459 cases, leaving 112,369 mutations in arrears. At the commencement of the year 1903-04 the number of mutations in arrears was 71,171, and an expenditure then of four-fifths of the time and energy spent this year would have left a clear sheet for 1904-05. Excluding the districts under settlement the largest number of new mutations occurred in the Ferozepore District and reached, as the Commissioner puts it, the appalling figure of 51,600. In one tahsil alone (Moga) 23,681 mutation orders were passed, *viz.*, more than (and in most cases far more than) the number disposed of in 12 out of 22 districts (Ferozepore and 6 under settlement excluded,) and yet there were nearly 5,000 cases in arrears, and I was informed there the other day that there are actually a great many more cases which the patwaris have not had time to enter up.

In the face of such figures it is idle to waste time discussing whether all mutation orders were passed in the village itself, or whether full and due enquiry into possession, &c., was made before an order was passed. As things stand, we are only demanding an impossibility. It behoves us rather to bestir ourselves, and that speedily, to strengthen the staff employed to deal with this volume of work, unless we are content to see the village records lose irretrievably the standard of accuracy which has, and I think with justice, hitherto been claimed for them.

Some little effort has already been made in this direction, as during the past year 13 extra Naib-Tahsildars were deputed for various short periods, generally of two months only, to the tahsils most in arrears. In paragraph 8 of the orders of Government on last year's report the Financial Commissioner was asked to notice the result of the plan tried in the Lahore Division of making the extra Naib-Tahsildar do ordinary tahsil work and detailing the permanent Naib-Tahsildars to clear off the arrears of mutations. The Commissioner of Lahore has already reported on the subject to the Financial Commissioner and his opinion and those of the Deputy Commissioners of the districts where opportunity arose for trying the plan, show that it was an unqualified success, as it naturally would be. Certain subsidiary matters, which there is not space in this report to detail, remain to be discussed, but I may note that the Commissioner of Jullundur, which taken as a whole is the heaviest division for mutations,

says that he is strongly of opinion that no extra Naib Tahsildars should be employed on the work which should be entrusted only to officers of some experience.

The fact of the matter seems to be that with the great increase in the value of agricultural land which has taken place in recent years, an increase which has been impressed on the zamindars by legislative action such as the Land Alienation Act, greater importance is attached every year to a mutation entry. Further measures are now required to justify the reliance placed by the people on the revenue records, and incidentally save them from the ills of endless litigation, by keeping those records correct and up-to-date.

One fault in mutation procedure observed in several districts, chiefly in the Jullundur Division, is that apparently either acting under orders or taking cover under Section 36 (2) of the Land Revenue Act, Tahsildars avoid enquiry into cases of disputed possession and send such cases to the Revenue Assistant for disposal. This only increases that officer's work and, besides being quite unnecessary under the law, can only result in mutation orders not being passed at a local enquiry. The practice has been stopped in Jullundur but it may exist in other divisions.

Partitions.

22. The growing complexity of revenue work is further exemplified by the number of partition cases. Five years ago the new cases used to be under 7,600 a year; this year there were 8,167 and last year the number was over 8,300. The number of cases decided this year was 8,418 which is 1,950 more than were decided in 1903-04. The pending file is slightly smaller, however, than it was this time last year and much smaller than it was at the end of 1905-06, but even so it is as high as 4,400 cases. This moderately satisfactory result was only attained by extra exertions. Two extra Naib Tahsildars were deputed for three months each to Gujranwala for this duty and both did very well the Commissioner says. The pending file in districts not under settlement is heavy in Gujranwala (333), Jhelum Colony (205), Mianwali (219) and Muzaffargarh (209). Extra help will probably be required in some of these districts this year. The Kangra District for some reason shows by far the largest number of partitions instituted and disposed of in the province, but the work is very well in hand. This is no unusual feature for this district, so there must be something peculiar and yet simple in the land tenures or in the method the record was framed at last settlement.

Note-books.

23. The village note-books are reported to be complete and up-to-date. Much more attention has been devoted lately to their inspection in tahsil offices with the result that egregious blunders are being gradually eliminated. On the whole I think they are very fairly accurate. Note-books have still to be prepared for the Crown villages in the Jhelum Colony and part of Lyallpur.

Abstract village note-books are regularly kept up throughout the Province, except in the colonies and in the Kangra District where it was decided in 1902-03 that they might be dispensed with. Remarks were made in them by the Deputy Commissioners or Revenue Assistants when on tour in the Umballa, Ludhiana, Montgomery, Amritsar, Sialkot, Attock and Muzaffargarh Districts. R. S. Tilok Chand wrote up remarks in the abstract note-books of the 63 villages in the Chunian Colony before leaving the Kasur Sub-division. The inspection notes of the Settlement Officer, Rawalpindi, were incorporated in these books, and the same procedure is being followed in Karnal. The Deputy Commissioners of Sialkot and Jhelum found their volumes of great use in the matter of granting and realising suspensions of land revenue. This is an obvious use to which these note-books can be put, and it should be of more general application than appears to be the case. But, as remarked in last year's report, the abstract note-books should be kept at the sadr and not buried in the tahsils. Arrangements could easily be made for writing them up annually and the Collector would then have them at hand when required.

24. Attention is being devoted to the maintenance of trijunction points, traverse marks and base line stones. The district reports give details of repairs having been effected at a large number of points, and state that Land Revenue Rule 44 and paragraph 87 of Revised Revenue Circular 28 are observed.

Survey marks.

A good deal of useful work was done during the year in erecting permanent boundary pillars between Native States and the adjoining districts.

By a Circular issued in August 1908 the charge of the Great Trigonometrical Survey stations was transferred from the Police to the Revenue Department. Several of them required repairs which have either been executed or are in progress.

25. The new arrangements mentioned in last year's report for stationery supplies have hardly had time to settle down into working order. My predecessor, Mr. Hamilton, entered into a five years' contract at very cheap rates for large quantities with Messrs. Gulab Singh and Sons for lithographic printing, and with the Scindia Paper Mills at Lucknow for three years for the supply of paper. The printing is fairly satisfactory, though I am afraid a good deal of inconvenience was caused to districts this year by the delay in meeting their annual indents for patwari forms. This was due to an attempt to send the press a consolidated indent for the whole Province and so secure the advantage of the low rates for bulk. Consequently a delay in the submission of their indents by one or two districts delayed the supply to all the others. The matter is engaging my attention, and steps will be taken to prevent any such inconvenience this year. The supply of paper has not been quite satisfactory, and it is possible that the Mill may not find itself in a position to fulfil its contract. This also is being attended to.

Supply of patwari stationery, &c.

26. The instructions contained in paragraph 12 of the Financial Commissioner's Review of last year's report are being carried out and translations of our inspection notes are now issued with the notes. I understand that the inspections made last year were found to be helpful and bore fruit in several districts.

Inspection notes.

C. A. BARRON,

14th December 1908. *Director of Land Records, Punjab.*

QUINQUENNIAL RETURN.

STATEMENT No. I.

TABLE SHOWING THE STATISTICS OF EXISTING PATWARI AND FIELD KANUNGO CIRCLES.

1	2	3	4	5	6	7	8	9	10	11	12	13
			Area and Revenue (00's omitted).					Average per Field Kanungo.		Average per Patwari.		
			Area in acres.									
District.	Number of Field Kanungos.	Number of Patwaris.	Total.	Cultivated.	Total assessment.	Number of fi	Number of Khatauni holdings	Fields.	Khatauni holdings.	Fields.	Khatauni holdings.	Remarks.
Hissár	15	306	33,138	26,949	8,248	489,380	290,660	32,625	19,377	1,599	950	
Rohtak	10	242	11,536	9,717	9,515	1,085,874	266,065	108,587	26,606	4,487	1,099	
Gurgáon	14	312	12,339	9,877	12,184	1,066,114	372,120	76,151	26,580	3,417	1,193	
Delhi	11	226	8,179	5,512	8,539	917,652	261,414	83,423	23,765	4,060	1,157	
Karnál	15	333	20,006	11,226	10,717	1,749,821	370,494	116,655	24,700	5,255	1,113	
Ambála	15	358	11,986	7,628	11,500	1,404,630	443,399	93,642	29,560	3,924	1,239	
Simla	1	8	490	99	175	49,840	10,376	49,840	10,376	6,230	1,297	
Kángra	16	316	24,689	5,856	9,264	2,192,055	444,851	137,003	27,803	6,937	1,408	
Hoshiárpur	20	461	14,282	7,370	14,272	3,053,491	838,420	152,675	41,921	6,624	1,819	
Jullundur	14	402	8,667	6,938	14,861	2,166,786	593,747	154,770	42,410	5,390	1,477	
Ludhiána	15	300	9,002	7,536	11,156	1,502,393	379,772	100,160	25,318	5,008	1,266	
Ferozepore	16	356	25,988	22,559	11,844	1,407,507	490,850	87,969	30,678	3,954	1,379	
Montgomery	13	201	28,924	7,853	4,075	881,086	198,403	67,776	15,262	4,383	987	
Lahore	17	343	23,060	14,566	11,656	1,933,219	451,702	113 719	26,571	5,636	1,317	
Amritsar	11	305	9,976	7,872	12,767	1,434,167	548,858	130,379	49,896	4,702	1,799	
Gurdáspur	17	426	11,668	8,392	15,374	1,586,699	610,772	93,335	35,928	3,725	1,434	
Siálkot	17	403	12,704	9,370	15,135	1,959,052	1,028,151	115,238	60,479	4,861	2,551	
Gujránwála	18	341	19,178	11,677	17,167	1,650,637	305,633	91,702	16,980	4,841	896	
Gujrát	10	232	12,391	8,432	8,426	1,198,761	462,102	119,876	46,210	5,167	1,992	
Shahpur	7	134	20,934	5,673	4,896	407,864	156,550	58,266	22,364	3,044	1,168	
Jhelum Canal Colony ...	10	155	10,952	6,917	4,340	1,020,621	74,434	102,062	7,443	6,585	480	
Jhelum	11	207	17,716	7,550	7,568	1,437,650	431,860	130,695	39,260	6,945	2,086	
Ráwalpindi	12	231	13,125	6,017	6,724	1,185,994	375,764	98,833	31,314	5,134	1,627	
Attock	10	214	27,011	10,491	6,743	941,069	363,768	94,107	36,377	4,398	1,700	
Miánwáli	20	249	49,913	7,781	3,978	864.193	250,529	43,210	12,526	3,471	1,006	
Lyallpur	16	293	22,897	15,650	7,428	2,105,863	150,453	131,616	9,403	7,187	514	
Jhang	12	199	18,026	5,583	6,079	995,940	186,754	82,995	15,563	5,005	938	
Multán	21	338	38,115	10,948	9,539	1,164,073	206,620	55,432	9,839	3,444	611	
Muzaffargarh	22	270	20,211	5,545	6,722	1,039,464	297,342	47,248	13,516	3,850	1,101	
Dera Gházi Khan ...	13	182	34,751	10,668	5,196	618,216	242,058	47,555	18,619	3,397	1,331	
Total ...	419	8,343	571,854	282,252	276,088	39,510,111	11,103,921	94,296	26,501	4,735	1,331	

NOTE.—This is quinquennial statement. It is prepared for the report for 1907-08.

STATEMENT No. III.

STATEMENT SHOWING THE EDUCATIONAL QUALIFICATIONS OF PATWARIS AND PATWARI CANDIDATES AND PUNISHMENTS AND PROMOTIONS OF PATWARIS FOR THE YEAR ENDING 30TH SEPTEMBER 1908.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	PATWARIS AND ASSISTANT PATWARIS.									CANDIDATES.							
DISTRICT.	Number.	Number who have passed. The old Entrance or present Matriculation Examination of the University or higher examinations.	Number who have passed. The old University Middle School or present Departmental Middle School Examination.	Total of columns 3 and 4.	Percentage of column 5 on column 2.	Number who belong to agricultural tribes.	Number dismissed.	Number reduced, suspended, or fined.	Number promoted to Kanungoships or other appointments.	Number.	Percentage of column 11 on column 2.	Number who have passed. The old Entrance or present Matriculation Examination of the University or higher examinations.	Number who have passed. The old University Middle School or present Departmental Middle School Examination.	Total of columns 13 and 14.	Number who belong to agricultural tribes.	Number who have passed the Patwari Examination.	REMARKS.
Hissár	331	5	92	97	29	76	11	67	5	120	36	2	38	40	73	60	
Rohtak	258	1	125	126	49	58	2	190	3	121	47	1	81	82	55	82	
Gurgáon	332	4	184	188	57	96	1	208	4	110	33	...	72	72	61	76	
Delhi	237	1	107	108	46	51	17	49	...	82	35	2	54	56	39	32	
Karnál	353	6	133	139	39	119	9	286	...	141	40	2	64	66	67	118	
Ambála	383	6	199	205	54	112	6	79	1	140	37	5	109	114	61	45	
Simla	8	...	1	1	13	8	...	4	...	7	88	...	...	...	7	3	
Kángra	316	...	72	72	23	125	3	31	2	114	36	2	94	96	57	111	
Hoshiárpur	481	8	216	224	47	164	13	69	...	76	16	2	67	69	39	70	
Jullundur	418	7	170	177	42	120	14	50	3	68	16	4	48	52	27	68	
Ludhiána	307	4	171	175	57	88	6	35	..	147	48	4	111	115	64	118	
Ferozepore	378	4	123	127	34	110	2	17	6	126	33	7	64	71	61	112	
Montgomery	214	2	60	62	29	36	8	44	...	61	28	3	28	31	11	53	
Lahore	358	3	159	162	45	88	8	38	6	113	32	5	50	55	42	66	
Amritsar	325	3	130	133	41	68	4	151	3	121	37	5	88	93	49	70	
Gurdáspur	481	11	196	207	43	150	8	234	2	118	25	11	78	89	52	104	
Siálkot	425	13	122	135	32	122	5	104	2	69	16	2	53	55	38	65	
Gujránwála	364	6	144	150	41	54	14	134	3	73	20	1	43	44	38	48	
Gujrát	244	1	54	55	23	76	...	45	..	87	36	8	49	57	65	70	
Shahpur	146	...	35	35	24	23	5	49	1	36	25	2	12	14	22	19	
Jhelum Colony ...	157	1	67	68	43	52	6	6	...	26	17	...	11	11	16	22	
Jhelum	221	3	70	73	33	52	6	26	...	73	33	1	27	28	43	69	
Ráwalpindi	231	2	62	64	28	81	1	19	2	84	36	3	22	25	45	52	
Attock	214	2	62	64	30	74	7	25	1	56	26	1	25	26	24	39	
Miánwáli	249	7	90	97	39	60	4	149	3	131	53	...	42	42	48	128	
Lyallpur	316	13	208	221	70	56	1	14	3	85	27	4	65	69	30	69	
Jhang	209	4	91	95	45	22	1	44	1	55	26	3	40	43	17	41	
Multán	363	8	153	161	44	88	2	59	..	127	35	6	74	80	62	102	
Muzaffargarh	285	8	118	126	44	84	2	109	...	74	26	3	34	37	38	57	
Dera Gházi Khan ...	191	...	45	45	24	99	4	115	1	68	36	2	25	27	55	59	
Total ...	8,795	133	3,459	3,592	41	2,412	170	2,450	52	2,709	31	91	1,568	1,659	1,306	2,019	

STATEMENT No. III A.

STATEMENT SHOWING EDUCATIONAL QUALIFICATIONS OF KANUNGOS AND KANUNGO CANDIDATES AND PROMOTIONS OF KANUNGOS FOR THE YEAR ENDING 30TH SEPTEMBER 1908.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	KANUNGOS.					KANUNGO CANDIDATES.									
DISTRICT.	Total number of the Kanungo Establishment.	*Number of Kanungo vacancies filled during the year.*			Number of Kanungos promoted to Náib Tahsildarship or higher appointments during the year.	*Total number of candidates on the list.*			Percentage of column 9 on column 2.	Number who belong to agricultural tribes.	*Number who have passed.*		Number who have passed the Kanungo examination.	Number who have received Director's certificate of efficiency.	REMARKS.
		Given to Patwaris accepted under Rule 103 (*ii*).	Given to candidates accepted under Rule 103 (*iii*).	Total.		Accepted under Rule 103 (*ii*).	Accepted under Rule 103 (*iii*).	Total.			The old Entrance or present Matriculation Examination of the University or higher examinations.	The old University Middle School or present Departmental Middle School Examination.			
Hissár	22	2	...	2	1	13	17	30	136	4	17	7	14	6	
Rohtak	16	...	2	2	...	7	5	12	75	3	5	6	4	4	
Gurgáon	21	...	1	1	1	6	5	11	52	4	5	6	11	10	
Delhi	16	...	3	3	...	5	5	10	62	3	6	3	5	...	
Karnál	22	...	1	1	1	7	4	11	50	8	5	4	11	11	
Ambala	22	1	2	3	1	9	3	12	55	5	4	7	12	12	
Simla	2	...	...	...	...	1	1	2	100	2	1	1	2	2	
Kángra	25	3	...	3	...	15	11	26	104	6	11	7	19	17	
Hoshiárpur	26	...	1	1	...	8	3	11	42	6	5	6	11	11	
Jullundur	20	5	...	5	...	10	10	20	100	10	13	4	15	15	
Ludhiána	21	...	...	...	...	10	6	16	76	9	6	8	15	15	
Ferozepore	23	1	1	2	...	7	10	17	74	4	10	3	7	7	
Montgomery ...	19	...	...	...	...	8	7	15	79	3	7	2	13	13	
Lahore	23	1	1	2	...	4	4	8	35	3	4	3	2	1	
Amritsar	16	...	...	...	1	4	8	12	75	6	7	5	7	7	
Gurdáspur	23	2	1	3	2	9	8	17	74	5	11	3	14	14	
Siálkot	24	1	...	1	1	10	5	15	63	7	7	3	13	12	
Gujránwála	24	2	...	2	...	11	5	16	67	3	8	...	16	15	
Gujrát	15	...	...	...	...	9	6	15	100	4	6	5	11	11	
Shahpur	13	1	...	1	...	4	3	7	54	5	3	3	6	6	
Jhelum Colony ...	12	..	1	1	...	5	2	7	58	5	2	2	4	4	
Jhelum	16	..	1	1	...	14	14	28	175	6	14	11	17	17	
Ráwalpindi	18	2	...	2	...	7	4	11	61	6	6	5	7	7	
Attock	16	1	...	1	...	5	4	9	56	2	4	5	8	7	
Miánwáli	26	3	...	3	...	20	3	23	88	11	9	9	16	12	
Lyallpur	19	...	...	...	...	11	4	15	79	5	5	8	12	12	
Jhang	17	1	...	1	1	5	5	10	59	4	6	2	7	3	
Multán	28	...	1	1	2	11	6	17	61	2	9	8	17	15	
Muzaffargarh ...	27	...	...	...	...	9	6	15	56	10	7	7	11	11	
Dera Gházi Khan ...	19	...		...	...	11	4	15	79	6	4	4	13	13	
Total ...	591	26	16	42	11	255	178	433	73	157	207	147	320	290	

STATEMENT No. IV.

STATEMENT SHOWING THE WORKING OF THE LAND RECORD AGENCY DURING THE YEAR ENDING 30TH SEPTEMBER 1908.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
		Mutations.					Partitions.							Detailed Jamabandis.			Number of Villages in which crop inspections were checked.			District Kanungo's work.			Boundary and Survey Marks.			
																							Total repaired during the year.			
District.	Number of villages.	Number pending from last year.	Number instituted.	Total for disposal.	Number attested.	Balance unattested at close of year.	Number pending from last year.	Number instituted.	Total for disposal.	Number decided.	Area in acres involved in decided cases.	Cultivated area in acres included in column 12.	Number of cases pending at close of year.	Number of villages for which prepared during the year.	Number of villages in which checked by Collector and his Assistants.	Number of Jamabandis and annual papers filed by due dates.	By Collector and his Assistants.	By Tahsildars.	By Naib Tahsildars.	Number of days spent on tour.	Number of villages tested.	Number of inspections of Tahsil Offices.	Tri-junction pillars.	Square survey marks.	Traverse points.	Trigonometrical survey pillars.
Hissár	1,007	6,465	26,771	33,236	26,515	6,721	257	300	557	378	50,715	42,523	179	189	33	152	438	501	754	129	231	5	450	...	60	5
Rohtak	531	8,610	60,781	69,391	61,029	8,362	143	300	443	301	4,975	3,237	142	3	40	514	500	290	736	...	...	...	4	72	...	...
Gurgáon	1,263	7,818	44,618	52,436	51,049	1,387	93	108	201	151	5,557	3,530	50	878	18	1,264	281	807	1,095	...	...	...	..	...	...	...
Delhi	822	4,605	56 047	60,652	55,072	5,580	111	343	454	332	12,075	11,810	122	...	...	822	96	388	821	...	...	...	204	87	...	...
Karnál	1,448	9,605	63,327	72,932	69,409	3,523	446	286	732	327	30,165	19,714	405	...	...	...	125	312	779	7	...	3	154	...	...	...
Ambala	1,797	3,549	33,733	37,282	34,473	2,809	66	193	259	187	4,869	3,159	72	445	10	439	299	436	558	76	79	7	121	34	...	1
Simla	21	156	1,029	1,185	1,098	87	8	4	12	5	30	19	7	5	...	125	...	...	10	198	21	2	...	...	...	...
Kángra	718	904	32,492	33,396	32,328	1,068	137	513	650	582	6,319	5,617	68	306	18	628	44	338	289	262	410	12	435	...	...	...
Hoshiárpur	2,179	5,010	44,637	49,647	41,399	8,248	157	353	510	338	10,021	4,118	172	547	133	2,179	288	510	967	257	470	8	196	...	...	...
Jullundur	1,313	3,886	31,452	35,338	31,718	3,620	145	342	487	331	6,395	4,985	156	331	36	331	316	438	497	218	417	8	69	...	...	...
Ludhiána	905	2,348	24,786	27,134	24,124	3,010	45	198	243	205	1,548	1,476	38	237	86	905	185	374	452	150	405	6	...	...	...	4
Ferozepore	1,612	5,538	51,608	57,146	48,609	8,537	128	373	501	343	58,433	52,943	158	401	29	1,556	206	480	628	202	421	9	...	...	76	...
Montgomery	1,394	498	3,360	3,858	3,209	649	61	165	226	141	17,852	9,963	85	323	23	321	94	399	425	145	573	2	...	...	...	13
Lahore	1,662	2,792	15,732	18,524	15,441	3,083	137	170	307	181	13,629	5,819	126	388	64	304	509	734	1,080	119	185	8	27	22	...	...
Amritsar	1,075	2,693	26,435	29,128	25,971	3,157	106	276	382	237	7,101	5,353	145	262	19	1,075	118	484	469	103	164	6	82	13	...	9
Gurdáspur	2,365	6,873	67,754	74,627	65,355	9,272	214	336	550	283	6,746	5,500	267	735	246	735	440	1,691	2,452	...	...	...	...	5	30	...
Sialkot	2,524	6,597	37,407	44,004	38.264	5,740	88	250	338	202	22.591	16,941	136	718	339	2,506	1,867	1,396	802	185	502	10	...	4	...	6
Gujranwala	1,395	3,345	12,795	16,140	13,111	3,029	595	197	792	459	29,833	4,598	333	537	...	1,932	128	446	647	121	185	7	...	...	...	...
Gujrat	1,440	3,470	31,611	35,081	27,910	7,171	98	314	412	252	4,591	3,670	160	255	60	255	85	255	301	153	391	9	...	...	...	...
Shahpur	533	1,024	8,880	9,904	8,629	1,275	60	99	159	73	5,353	624	86	111	60	533	162	279	275	206	271	8	2	2	...	...
Jhelum Colony	604	1,123	4,603	5,726	4,530	1,196	268	163	431	226	30,767	9,592	205	176	...	176	71	...	223	...	...	...	...	...	...	...
Jhelum	954	4,453	19,530	23,983	18,903	5,080	141	251	392	241	9,310	2,552	151	245	91	243	182	710	416	130	282	6	...	...	...	...
Rawalpindi	1,174	2,847	38,214	41,061	35,648	5,413	35	224	259	125	11,086	3,693	134	334	...	1,065	437	263	215	143	469	6	...	...	...	...
Attock	657	2,480	20,643	23,123	20,202	2,921	129	422	551	412	95,089	37,270	139	160	39	160	320	301	319	100	231	4	...	...	...	...
Miánwali	611	2,726	12,934	15,660	12,746	2,914	275	323	598	379	47,916	29,078	219	169	27	169	110	204	369	11	10	1	131	34	...	10
Lyallpur	1,335	1.897	34,083	35,980	33,451	2,529	23	62	85	37	3,467	2,202	48	322	8	321	110	125	425	140	392	5	6	2	...	...
Jhang	799	1,253	8,230	9,483	9,018	465	215	282	497	438	42,469	14,982	59	207	55	207	359	238	483	142	799	6	1	4	...	...
Multan	1,446	505	7,553	8,058	7,670	388	161	448	609	420	18,550	9,431	189	362	39	362	339	357	1089	195	280	9	112	1	...	...
Muzaffargarh	769	1,244	10,957	12,201	10,909	1 292	123	445	568	359	12,581	6,370	209	193	...	757	...	429	1,124	135	209	6	2	5	...	6
Dera Gházi Khan ...	840	2,425	19,086	21,511	17,669	3,842	190	427	617	473	18,697	10,008	144	210	36	209	282	274	520	211	921	7	...	...	...	...
Total ...	35,193	106,739	851,088	957,827	845,459	112,368	4,655	8,167	12,822	8,418	588,130	330,777	4,404	9,049	1,509	20,245	8,391	13,459	19,220	3,738	8,318	160	1,996	285	166	54

STATEMENT No. V.

ANNUAL EXPENDITURE ON THE PATWARI ESTABLISHMENT FOR THE YEAR ENDING 30TH SEPTEMBER 1908.

1	2	3	4	5	6	7	8	9	10	11	12	13
District.	Total number of Patwaris, including Assistant Patwaris.	Salaries.		Stationery and Printing.		Patwari School.	Survey equipment.	Rewards and gratuities.	Other charges.	Total.		Remarks.
		Cost.	Annual average per head.	Cost.	Annual average per head.					Cost.	Annual average per head.	
Hissár	331	47,351	143	886	3	...	...	1,010	320	49,567	150	
Rohtak	258	36,875	143	4,523	18	538	703	1,030	436	44,105	171	
Gurgáon	332	44,417	134	681	2	90	...	170	1,336	46,694	141	
Delhi	237	37,896	160	3,292	14	...	...	3,420	204	44,812	190	
Karnál	353	49,558	140	4,374	12	2	...	530	182	54,646	155	
Ambala	383	51,012	133	1,058	3	134	...	...	1,083	53,287	139	
Simla	8	1,016	127	34	4	.	...	...	30	1,080	135	
Kángra	316	41,523	131	1,616	5	242	...	190	10,351	53,922	171	
Hoshiárpur	481	66,389	138	1,065	2	...	..	840	426	68,720	143	
Jullundur	418	52,489	126	1,483	4	96	...	1,250	500	55,818	134	
Ludhiána	307	40,248	131	1,691	6	24	...	120	589	42,672	139	
Ferozepore	378	58,859	156	159	1	127	...	300	365	59,810	158	
Montgomery	214	26,902	126	730	3	...	187	840	444	29,103	136	
Lahore	358	49,912	139	1,007	3	...	...	150	804	51,873	145	
Amritsar, ...	325	45,945	141	1,221	4	...	369	1,235	432	49,202	151	
Gurdaspur	481	67,370	140	1,315	3	...	3	1,890	869	71,447	149	
Sialkot	425	59,291	140	1,867	4	...		...	438	61,596	145	
Gujranwala	364	47,906	132	727	2	...	11	870	2,670	52,184	143	
Gujrat	244	34,627	142	1,205	5	138	...	100	474	36,544	150	
Shahpur	146	17,482	120	820	6	...	96	...	302	18,700	128	
Jhelum colony	157	22,962	146	399	2	...	...	...	489	23,850	152	
Jhelum	221	30,804	139	1,475	7	173	14	240	249	32,955	149	
Rawalpindi	231	35,000	152	504	2	...	...	..	353	35,857	155	
Attock	214	31,226	146	837	4	...	...	930	384	33,377	156	
Mianwali	249	34,073	137	2,954	12	95	...	130	3,214	40,466	163	
Lyallpur	316	41,587	132	1,402	4	...	...	...	632	43,621	138	
Jhang	209	30,914	148	1,339	6	...	...	480	550	33,283	159	
Multan	363	52,421	144	1,508	4	...	11	600	786	55,326	152	
Muzaffargarh	285	39,930	140	1,868	7	...	4	600	409	42,811	150	
Dera Ghazi Khan	191	26,290	138	878	5	...	...	525	242	27,935	146	
Director of Land Records Reserve.	...	...	...	26,311	...	...	...	...	7,668	33,979	...	
Total ...	8,795	12,22,275	139	69,229	8	1,659	1,398	17,450	57,231	13,49,242	153	

OPERATIONS OF THE DEPARTMENT OF AGRICULTURE, PUNJAB, FOR 1908-09.

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REPORT

ON THE

OPERATIONS OF THE DEPARTMENT

OF

AGRICULTURE,

PUNJAB,

For the year ending the 30th June **1909.**

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1909.

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Proceedings of His Honour the Lieutenant-Governor of the Punjab in the Department of Revenue and Agriculture (Agriculture),—No. 202, dated the 2nd November 1909.

READ—

Letter No. 442, dated the 6th October 1909, from the Junior Secretary to the Financial Commissioner, Punjab, forwarding with the comments of the Financial Commissioner the annual report on the Department of Agriculture in the Punjab for the year ending 30th June 1909.

REMARKS.—The Agricultural Department in the Punjab is already beginning to make its influence felt, especially in the canal colonies, which contain the most progressive element in the rural population and in which the only existing agricultural station and seed farm are situated. The question of establishing a second station in the Punjab is still under consideration. So far the activities of the department have mainly consisted in preparation for the opening of the Agricultural College, in experiments with new and improved varieties of crops, and in the introduction of agricultural machinery.

2. Owing to the incomplete state of the buildings, the College could not be opened in the year under review. Its foundation has created considerable interest, and 574 applications for admission have already been received. Of these it is satisfactory to note that a fair proportion has come from landowners and others whose main object is to acquire a scientific knowledge of agriculture. For the first year, however, the number of admissions will be restricted to 16, as the teaching staff has not yet been fully recruited and trained in its duties. This is of course a ridiculously small number of students considering the excellent buildings that have been provided. It is hoped that it will speedily be possible to bring the numbers nearer to their full strength. The Lieutenant-Governor has elsewhere recorded his acknowledgment of the public spirit of Rai Sahib Mohan Lal in founding the Sir Denzil Ibbetson Scholarship and of Chaudhri Sultan Ahmad, Extra Assistant Commissioner, who has endowed a silver medal to be named after Sir James Wilson, Financial Commissioner of the Province.

3. The more interesting experiments have already been noticed by the officiating Financial Commissioner. Probably the most important results obtained are those concerning the milling and baking qualities of Punjab wheats. These show that the red wheats which are most suited for cultivation in the Province are superior from the point of view of both miller and baker to the soft white wheats which have hitherto been in greatest demand for export. The matter is one of great importance to the Punjabi cultivator and to consumers generally, and the Lieutenant-Governor cordially approves of the proposal to disseminate the information gained as widely as possible in the shape of a bulletin.

The result of the inquiries of the imperial committee on elevators is awaited, as the subject is one of the greatest importance to the colonies areas where the conditions are similar to those in Canada and the United States.

4. Another experiment of considerable interest is the attempt to revive sericulture in the Punjab. This attempt has attained a very fair measure of success. His Honour will follow with interest the results of Shaikh Ghulam Sadik's enterprise in taking over the operations in Gurdaspur and Kangra as a private venture. If he succeeds in growing and reeling good silk, the revival of a moribund industry should be assured. Considerable advance has been made in the work of selecting a cotton properly suited to the Province; interesting experiments have been made in the cultivation of jute, the trial of chrome leather for well buckets, the use of castor cake for manure and in sugar-making with Mr. Hadi's plant, but definite results in these matters have not yet been attained, though it would seem fairly clear that the Hadi process is not suited to the Punjab. Bee keeping and poultry farming have also received a considerable share of attention during the year. Arrangements are being made for leasing a large plot of land near Lahore to a military pensioner for use as a poultry farm, and the success of this experiment will be watched with interest. It is also hoped that it may be practicable to experiment with poultry by utilising the staff of the Lahore Zoological Gardens.

It is unfortunate that the state of the laboratories has delayed the investigation of the important *reh* problem. It should be taken up again as soon as possible.

Sir Louis Dane attaches great importance to the quinquennial wage census, figures which have recently come to notice showing that the data which are relied on for ascertaining rates of wages are often far from accurate.

5. Agricultural machinery is growing in popularity, as is proved by the fact that a commercial firm have considered it worth their while to relieve the department of the work of distribution in the case of reapers and some other implements. Much of the success attending the introduction of these machines is due to the zealous work of the Deputy Director, Mr. Milligan, who is at the same time fully alive to the danger of destroying the confidence already gained by trying to push things too fast. A promising feature in the year's work is the interest taken by visitors in the agricultural station, and the Lieutenant-Governor is pleased to note that the officers in charge are careful to show off the capabilities of the station to the best possible advantage.

6. The Agricultural Department, though still in its infancy, and handicapped by want of buildings and staff, has already justified its existence by real practical work, for which Mr. Renouf and his expert colleagues deserve much credit.

ORDER.—Ordered that a copy of the foregoing remarks be forwarded to the Junior Secretary to the Financial Commissioner for information, that they be published in the *Punjab Gazette* and submitted to the Government of India in the Department of Revenue and Agriculture.

By order of His Honour the Lieutenant-Governor,

H. P. TOLLINTON,

Offg. Secretary to Government, Punjab.

Punjab Government Press, Lahore—3-11-09—1412—591—K. C. M.

No. 442.

FINANCIAL COMMISSIONER'S OFFICE,

Dated LAHORE, *the 6th October* 1909.

FROM

H. S. WILLIAMSON, ESQUIRE,

Junior Secretary to the Financial Commissioner, Punjab,

To

H. P. TOLLINTON, ESQUIRE,

Secretary to Government, Punjab.

SIR,

I am directed to submit the annual report by the Director of Agriculture, Punjab, on his Department for the year ending 30th June 1909, together with a separate note containing the comments of the officiating Financial Commissioner.

I have, etc.,

H. S. WILLIAMSON,

Junior Secretary to the Financial Commissioner, Punjab.

Note by the Hon'ble Mr. J. M. Douie, C.S.I., Officiating Financial Commissioner, Punjab, on the annual report of the Department of Agriculture, Punjab, for the year ending 30th June 1909, dated 27th September 1909.

1. I shall only touch briefly on a few of the more important matters dealt with in Mr. Renouf's interesting report.

2. Mr. Milne, the Economic Botanist, has carried out useful crop experimental work. It is his function from the observation of the results obtained on small plots to select the best types and hand them over to the Professor of Agriculture for cultivation on a larger scale. If the results are favourable, seed is soon available for distribution. In the case of cotton, the first requirement was the elimination of a very large number of unsatisfactory varieties. Many remained for further experiment, and of these three, two American and one indigenous, have been passed on to the Professor of Agriculture. The same course has been adopted with the best of the twenty-five types of Punjab wheat classified by the Imperial Economic Botanist. In connection with the wheat experiments, the facts given in the 41st paragraph of the report as to the milling and baking qualities of hard wheats are very important and ought to lead to practical results profitable to the Punjab farmer. The jute crop was seriously injured by a caterpillar and the experiments are so far inconclusive. The land for the new agricultural station in the Jullundur district has been acquired.

3. It has been shown that the Hadi sugar-making plant is not likely to become popular in the Punjab. The reasons seem to be that the percentage of sugar to juice obtained here is much lower than in the United Provinces, while labour is far dearer, and *gur* fetches a high price. It was pointed out, when the experiments were first proposed, that conditions here differed from those in the United Provinces, because nearly everywhere in the Punjab the farmer converts his sugarcane juice into *gur*.

4. Mr. Milligan's work in connection with the introduction of suitable agricultural machinery is promising. A good type of plough seems to have been found, and there is already some demand for reapers due to scarcity and dearness of labour. It is satisfactory that a private firm, Messrs. Volkart Brothers of Karachi, has been ready to take over the sale of some of the implements. It is possible that in future in tracts where holdings are small co-operative rural societies may find it worth their while to buy ploughs and reapers for the use of their shareholders. Mr. Milligan is helping the Mamdot estate, which is under the Court of Wards, to reclaim for cultivation a large area of land.

5. The attempt to revive sericulture in the Punjab is in its infancy, but the result so far is hopeful, and an honorary magistrate of Amritsar, after practical experience at Sujanpur in Gurdaspur, has taken over as a private enterprise the work in that district and in Kangra, and is, with the help of the Agricultural Department, getting two hundred ounces of eggs from France.

6. There ought to be a future for poultry farming in this province. It is profitable to send fowls to market from great distances. There is an enterprising man at Gujar Khan in the Rawalpindi district who collects fowls for Simla. Poultry farms are about to be started at Lyallpur and Jhelum. The funds required for the latter are being supplied by the district board.

7. It is unfortunate that the *reh* investigation has for the present come to a standstill, for it is of great importance in connection with future canal colonization schemes. Mr. Barnes has been hampered by want of laboratories and qualified assistants. It is to be feared that the latter obstacle will continue for some time to come, and till it is removed research will be hampered by the absorption of the superior staff in teaching work.

8. The College was opened on 1st September. The number of applicants was very numerous, but in view of the insufficiency of the teaching staff only sixteen were admitted, of whom ten were scholarship-holders. Two

scholarships are allotted to each division. Delhi supplied a Hindu Jat and a Saini Sikh, Jullundur a Jat Sikh and a Pathan, Lahore a Muhammadan and an Indian Christian, Rawalpindi an Awan and a Khatri, Multan a Hindu Arora and a Sikh.*

Care will have to be taken that scholarship-holders come from true agricultural and landowning stocks. Mr. Barnes has pointed out that the oral examination of candidates showed that many of them knew little about ordinary Punjab farming. Ten acres of land in the farm have been set apart for the students to till with their own hands.

ANNUAL REPORT

OF THE

DEPARTMENT OF AGRICULTURE, PUNJAB.

FOR THE YEAR ENDING JUNE 30TH, 1909.

Part I.—Administrative.

Personal.

1. I held charge of the Department throughout the year.

Tours.

2. I spent 72 days on tour, visiting the districts of Amritsar, Shahpur, Kangra, Lahore, Rawalpindi, Jullundur, Gurdaspur, Ferozepore, Jhang, Multan, Muzaffargarh and Dera Ghazi Khan. I also attended the meeting of the Board of Agriculture at Nagpur.

The Deputy Director. See Appendix V.

3. Mr. Milligan's headquarters continue at Lyallpur. But it is hoped that it will be possible to provide a house for him at Jullundur by the autumn of 1910, when the opportunity will be taken of forming two Provincial Circles. Mr. Milligan was placed on special duty in England while he was on privilege leave last summer with reference to the construction of special reaping and winnowing machines for Punjab conditions and the experience of his machines has amply justified the step. Mr. Milligan has done excellent work in the introduction of improved agricultural machinery and he has had a busy year. Mr. Milligan officiated as Principal of the Agricultural College while Mr. Barnes was on 12 weeks' leave.

The Agricultural Chemist and Principal, Punjab Agricultural College. See Appendices IV and VI.

4. Mr. Barnes has again been hampered by want of laboratory accommodation and difficulties of staff. His laboratories will be ready by September and he will shortly represent the staff question. He took his work to Pusa in September, 1908, where he also acted on a special committee on indigo. The old Pusa laboratories were very kindly made available for his work. Returning to Lyallpur at the end of December, the duties of Principal made heavy demands on his time. He proceeded on privilege leave on the afternoon of the 13th April and on his return had unfortunately to apply for leave on medical certificate for six weeks. I have pleasure in acknowledging the thoroughness with which Mr. Barnes has gone into all the details of his work, and I hope that he will soon be in a position to start his laboratory.

The Professor of Agriculture. See Appendices I and II.

5. The appointment of Professor of Agriculture was held by Mr. Dobbs until September 3rd and then by Mr. Corbin until the end of the year. Mr. Corbin has been in charge of the Lyallpur Agricultural Station and he has also made special enquiries into opium. He has prepared a new scheme of cultural and manurial experiments for the Lyallpur Agricultural Station.

The Economic Botanist. See Appendices I and III.

6. The Economic Botanist has charge of plant breeding, plant selection and the trial of new varieties at the Lyallpur Agricultural Station. He also deals with fruit and has the control of the Mycological and Entomological Sections, in which, however, for want of staff, very little was possible. Mr. Milne has had very heavy work in organising his sections and in laying out his portion of the Lyallpur Agricultural Station. The inspection of his field plots furnished convincing evidence of the care and method with which his experiments are conducted.

Staff of the general branch.

7. There are three posts of Assistant Director. One officer appointed in 1908 at Pusa for a two years' course will pass out in 1910. This year, M. Fateh-ud-din, B.A., has been appointed to the second vacancy on Rs. 150-10-300, on 3 years' probation, and he also has been sent to Pusa for a 2 years' course. M. Fateh-ud-din belongs to a family of agriculturists. At the beginning of the year we had a farm manager and 7 agricultural assistants. The Manager of the Lyallpur Agricultural Station has obtained a good appointment on the staff of the Imperial Economic Botanist. One agricultural assistant resigned and another was promoted in the Department. On the other hand, four of the stipendiaries sent to the Cawnpore Agricultural College in 1906, who qualified for the Diploma of Licentiate in Agriculture in April, were given appointments as agricultural assistants. So, at the close of the year, we have an officiating manager and 8 agricultural assistants and these are all kept fully employed. We have 6 more stipendiaries at Cawnpore, 3 of whom will join the Department in 1910 and 3 in 1911. From 1912 onwards we shall obtain recruits from the Punjab Agricultural College. We were very shorthanded as regards Agricultural Assistants before the arrival of the new batch from Cawnpore and the staff deserve credit for their work. Difficulties as regards staff in the general branch should be less this year, and should gradually disappear. Our experience up to the present strongly confirms the view that men of true agricultural stock are needed for the various posts in the Agricultural Department.

College staff.

8. Two Assistant Professors out of five were recruited in 1907-08 and two men have been selected this year. These are Chowdhry Muhammad Zakka Ullah, B. Sc., Lahore, Assistant Professor of Agricultural Chemistry, and Mr. Ram Gopal, M.A., M.R.A.C., Assistant Professor in Economic Botany. Mr. Carson, Assistant Professor of Entomology, and S. Kharak Singh, Assistant Professor of Agriculture, have joined their appointments after a year's training at Pusa. The remaining vacancy is in Mycology, and this will probably prove a difficult post to fill. Out of six Laboratory Assistants one was appointed last year, but resigned his appointment in April. M. Yusaf Ali, Agricultural, Assistant, has recently been promoted to Laboratory Assistant in Economic Botany. The Provincial Government was addressed during the year with a view to an improvement in the salaries of the Assistant Professors and Laboratory Assistants and the proposals as regards the Assistant Professors have been sent to the Secretary of State. I apprehend that we shall experience special difficulty in filling the posts of Laboratory Assistant in the Chemical Laboratory. As already stated, Mr. Barnes will shortly represent the case.

Clerical and menial staff of the College.

9. The clerical and menial staff required for the Agricultural College and Research Institute has now been sanctioned by Government, this including establishment for the workshop and for the boarding house.

The buildings of the Agricultural College.

10. Details of the drainage, gas, electric light, and workshop schemes were worked out during the year, and estimates have now been prepared and sanctioned for practically all that is needed except the workshop and dairy. It is expected that the work will be sufficiently advanced to permit of students being received on September 1st, although some further time will elapse before the buildings are finally handed over.

Subsidiary buildings.

11. Various additions needed to complete two of the staff bungalows are being carried out. Quarters are being built for various assistants whose constant presence is needed at the Agricultural Station. Poultry runs are being constructed. Plans and estimates for field stores and offices for the Economic Botanist have also received administrative sanction. The year has been a very busy one in the preparation of plans for subsidiary buildings.

Equipment of the College.

12. The initial equipment has practically all been received. Progress has also been made towards the formation of a library.

13. On Government sanction being received to the College syllabus, and the scheme for scholarships and fees, it was arranged that the first year's class should assemble on July 20th. Unfortunately it was found impossible to have the laboratories and lecture rooms ready by that date, and the start had to be deferred until September 1st. As the staff of assistants has not been fully recruited and has to be trained in its duties, only a very small class of 16 is being admitted this year. There were 135 candidates for the open scholarships and 574 applicants for admission. The large majority were probably under the mistaken impression that the Licentiates of the College will receive special consideration in the matter of Government appointments. But, apart from this, it was gratifying to see that there were a sufficient number of young men whose main object was to study agricultural science for its own sake, with a view to the practical application of their knowledge in the management of their estates. As indicated by Mr. Barnes, some slight amendments will be required in the Prospectus.

The opening of the College.

14. Ten open scholarships, two in each division, each of the value of Rs. 10 per mensem, have been provided by the Local Government. Acknowledgments are due to Rai Sahib Mohan Lal for founding a scholarship of Rs. 12 per mensem in memory of the late Sir Denzil Ibbetson, and to Chowdhry Sultan Ahmed, Extra Assistant Commissioner, for endowing a silver medal to be named the "Sir James Wilson" medal.

Scholarships and prizes.

15. Orders of permanent and general interest which have issued during the year have been incorporated in the Departmental Orders, which have been revised and reprinted.

Revision of Departmental Orders.

16. A bulletin has been issued on the subject of those improved agricultural implements which have been tested by the Department and which are likely to prove useful to cultivators. Information is given as to the price, source of supply, the special advantages of each implement, and the conditions under which it will prove remunerative.

Bulletin on improved agricultural implements.

17. The periodical quinquennial cattle census was carried out in February, and the results have been reviewed in the Season and Crop Report. A scheme for a quinquennial wage census has been worked out. The first enquiry is to be made in December, provided the Province is free from plague and famine. The usual reports have been issued including the Season and Crop Report, the Veterinary Department Report, the Report on the Agri-Horticultural Gardens, the Kharif Note, Imperial Agricultural Statistics, periodical statistics of prices and rainfall, crop forecasts and weather and crop progress reports. Monthly notes on agricultural subjects have also been sent to the Press.

Other work of the Director.

18. His Honour the Lieutenant-Governor made two visits to the headquarters of the Department at Lyallpur and saw all the work in progress at the Agricultural Station. Inspections were also made by Sir James Wilson, Mr. Merk and the Inspector-General of Agriculture.

Inspections.

Part. II—Agricultural Stations and Seed Farms.

19. In the remaining sections of this report I propose to avoid as much as possible going over ground already fully covered in the reports of specialists which are attached as Appendices. In these cases, I shall confine myself to a very brief review.

Prefatory Note.

20. The Economic Botanist having taken over the majority of the experiments in hand with new varieties of crops, the Professor of Agriculture has practically made a fresh start with a series of cultural and manurial experiments. As these experiments have just been started, there is very little to report. The work on machinery has attracted most attention. The steady increase in the number of visitors is undoubted and is most satisfactory. The rates for monthly

The Lyallpur Agricultural Station. The Professor of Agriculture's section. See Appendix I.

labourers were fixed after enquiry from the Deputy Commissioner as to the prevailing local rates. It is desirable to give them a trial after the College buildings are complete, as the construction of these has certainly disturbed the labour market.

As above. Section under the Economic Botanist. See Appendix I.

21. The comprehensive scope of the work on wheat and cottons can only be gathered from a perusal of the Lyallpur Agricultural Station Report. For reasons of space, the summary in Appendix I can only give an inadequate idea of the extent and the complexity of the experiments on these crops which have claimed the greater part of Mr. Milne's time. As regards cotton, it is satisfactory to notice that three varieties are to be tried on a larger scale. In a few years, we may, I hope, look for a large number of improved varieties of both wheat and cotton. The classification of Punjab cottons is in progress. Further enquiry is needed into jute before it can be recommended for general cultivation. The chief difficulties are in connection with retting and with stripping and cleaning the fibre. A fruit orchard and a botanical garden have been partly laid out, and will be stocked this year.

The Jullundur Agricultural Station.

22. The Collector of Jullundur gave his award for the land needed for the Jullundur Agricultural Station in May. Rough plans and estimates for the buildings and wells, for the Deputy Director's house, and for an office are now before Government.

The Sargodha Seed Farm in 1908-09.

23. Owing to calamities of season, the Sargodha seed Farm started the year with no good seed in stock and, indeed, had to obtain its own seed from outside. This spring, 123 maunds of American cotton seed were sold to cultivators, 78½ maunds being farm grown. There are now good stocks of Australian, Lyallpur and Baggi of Leiah wheat. No reapers have been sold. It is reported that a good supply of labour seems assured to the Jhelum Colony in ordinary years as numbers of people regularly come over for the harvesting from the Thal where the crops ripen later than in the Colony. The receipts amounted to Rs. 7,800-12-0 against an expenditure of Rs. 3,865-1-0, leaving a profit of Rs. 3,935-11-0. The Seed Farm is exempt from land revenue and cesses. The sum which would have been leviable under these heads would have been Rs. 643-12-0. The Farm and the accounts were inspected once by me during the year.

Part III.—Demonstrations and other operations connected with Agricultural Improvements.

(*a*). New and Improved Varieties of Crops, etc.

Operations with American cotton. Section II of Appendix V.

24. The Deputy Director shows that the growers of American cotton in the Jhelum Colony did well as regards outturn and price in 1908. The heavy rainfall seemed to suit this variety. I entirely agree with Mr. Milligan as regards the very serious difficulties which are encountered in creating a local market for American cotton. I understand that the same trouble is being experienced with Egyptian cotton in Sindh. There is a slight increase of cultivation this year, but it is impossible to expect a rapid expansion.

Distribution in districts of seed of selected indigenous cotton.

25. It was apparent in 1907-08 that the operations in 5 districts for the improvement of indigenous cotton by rough and ready methods through the agency of the district or settlement staff were not likely to meet with any success except perhaps in Hissar which was a special case. The experiment was restricted to the districts of Hissar, Lyallpur and Dera Ghazi Khan during 1908-09, and, with a view to ascertaining definitely if the crops grown from selected seed were in any way superior to the crops of ordinary good cultivators, field inspections were made by Mr. Milne in Hissar and by Mr. Corbin in the other two districts. Mr. Milne found that the selected Hissar seed had given distinctly better results than ordinary seed. The plants were very uniform in character and remarkably healthy. Mr. Corbin reported that he could discover no difference

between the cotton grown from selected seed and that grown in the surrounding fields. On receiving copies of Mr. Corbin's report, the Deputy Commissioners of Lyallpur and Dera Ghazi Khan both agreed that their experiments should be closed. The general impression is that cotton-growers in these districts already do all that is reasonably possible for non-scientific men in the matter of the selection of their seed. Brief details of last year's work are as follows. Mr. Townsend at Hissar was handicapped by the unfavourable season. Sowing his selected seed on about 2½ acreshe obtained 576 seers of uncleaned cotton per acre. This is less than last year, but much more than the ordinary outturn of the district which he estimates at 300 seers per acre. This year, the selected cotton is being sown in strips parallel with ordinary cotton so as to obtain a reliable comparison. Forty-nine maunds of selected seed were distributed in Lyallpur, and 98 maunds in Dera Ghazi Khan.

Other points in the Deputy Director's report, Appendix V.

26. Progress with the reh question (Section III) is still delayed pending the starting of the chemical laboratory. Further trials of chrome leather for well buckets are encouraging (Section VII). The distribution of castor cake as a manure may lead to useful results (Section VIII). As regards advice to Court of Wards estates (Section IX), it has been arranged that the Deputy Director will visit a few of the more important estates and see what suggestions can be made for their improvement. The Mamdot experiment will be followed with great interest. All Court of Wards estates have been invited to refer any difficulties which may present themselves.

(*b*). Agricultural Machinery.

General remarks.

27. The subject of the introduction of improved agricultural machinery has engaged a considerable portion of the time of the Deputy Director and the Professor of Agriculture. With the present scarcity of labour and high rates of wages in newly colonised tracts, as well as in many old districts, it is important that every endeavour should be made to provide or devise suitable labour saving appliances. Considerable success has already been obtained with the "Raja" reaper, the "Diamond" plough, bullock hoes, and chaff cutters.

Reaping machines, Section I of Appendix V.

28. It is sufficient for me to refer to Mr. Milligan's report on this subject. The new reaper has given great satisfaction, and it will do better still with the new cornside attachment. The arrangements for the practical instruction of cultivators in the use of the reapers left nothing to be desired. The classes were very largely attended.

Winnowing machines. Section V of Appendix V.

29. The trials with the winnower devised last year by Mr. Milligan encourage the expectation that we shall soon be able to meet the large demand for a reliable machine of this kind.

The "Diamond" plough.

30. The Diamond plough is referred to at length in the detailed report of the Lyallpur Agricultural Station. As 42 have been sold, it is obvious that it has made a good impression. Mr. Corbin remarks that it will turn a good furrow burying most of the stubble and weeds, and that it can be drawn by average-sized bullocks. He estimates that one ploughing with this implement is better than six or seven with a country plough, the cost per ploughing being the same. Land ploughed with the "Diamond" plough also retains more moisture.

The bullock hoe.

31. This implement is also described in the detailed farm report. Twenty-two have been sold. In future, it is intended to stock a more strongly-built British machine. It is useful as a grubber. Mr. Corbin reports that three to five acres can be tilled in one day and brought into cultivation similar to that ploughed with a *desi* plough. With a ridging attachment, two acres can be ridged in one day, at a cost of a rupee an acre against four rupees per acre for hand labour.

Other machines.

32. The accounts received of the steam thresher seem to show that it is not likely to pay in present Punjab conditions. Other machines under trial include a universal cultivator, and a hand hoe. The Ferozepore and Gujranwala well gears referred to in last year's report, have been improved by the inventors, and are being tried in the Agri-Horticultural Gardens at Lahore.

Arrangements for the sale of machinery.

33. The policy which has been adopted for the sale of improved implements, is to encourage private firms to take agencies for them. This saves us an infinity of trouble, and also places the matter on a thorough business footing. Messrs. Volkart Brothers took over the reaper this year and their arrangements for advertising and for helping purchasers with skilled mistris were excellent. This firm is now taking over some other implements, the success of which is practically established. For the first introduction of implements, an advance of Rs. 4,000 has been sanctioned by Government for the establishment of an Agricultural Machinery Depot. The working of the Depot is referred to in the report of the Professor of Agriculture (Appendix II).

Special staff for giving demonstrations of new machines.

34. A temporary staff of two muqaddams has been sanctioned for giving practical instruction in the handling of new machines. An Agricultural Assistant has been placed on this duty and two trained labourers and special bullocks are kept at the Lyallpur Agricultural Station for this purpose.

Concessions by the North-Western Railway on agricultural machinery and implements.

35. The North-Western Railway have kindly extended the concession granted last year for mowing and reaping machines in through booking with foreign lines from Karachi, to all other agricultural implements. They have also granted favourable rates to the Department for bullocks and machinery which are booked from Lyallpur for the purpose of demonstration at fairs.

The "Hadi" sugar-making plant.
See Section IV of Appendix V.

36. There is good reason to believe that the "Hadi" plant is not suited to the Punjab. It was very unfortunate that the special apparatus needed for the general enquiry into sugarcane was damaged in transit from England. Mr. Milligan will doubtless continue the enquiry this winter.

Well-boring.

37. Details of schemes for the organisation of a staff of well-borers and also for well-surveys in districts, in which well irrigation is of importance, have been submitted to Government. Recent successes in tapping improved supplies by deep borings make it probable that the services of well-borers will be in considerable demand. I am greatly indebted to the United Provinces Department for assistance in working out these schemes

Part IV.—Entomology.

General work.
See Appendix III.

38. Owing to the resignation last autumn of the assistant on entomological work, very little has been possible this year in this section. Insect pests were also mainly conspicuous by their absence. The work of the Economic Botanist on silkworms, bollworms, and lucerne caterpillar is summarised in Appendix III.

Sericulture.
See also Appendix IV.

39. The sericulture experiment was confined to Gurdaspur, Chhanga Manga and Lyallpur. At the two last named places, the experiment was on a very small scale and was under Government supervision. At Gurdaspur, where Mr. Kennaway, Settlement Officer, was in charge, the silkworms were reared by private persons, at or near Nainikot in the Shakargarh tahsil, these being men who have been engaged in sericulture in a small way for years. The Kashmir Government very kindly lent us the services of three trained subordinates to give instruction in the methods in vogue in Kashmir. The produce was sent to Messrs. Anderson and Wright

to reel, and the silk has been consigned to Messrs. Durant Bevan and Co., London, for sale and valuation. The report of Messrs. Durant Bevan is still awaited, but the results as far as they have been ascertained are as follows :—

	Ounces of eggs.		Weight of cocoons partly dried as despatched.	Produce as reported by Messrs. Anderson and Wright.			
	Issued.	Hatched.		Dried cocoons.	Silk.	Chassum.	Silk per ounce of eggs hatched.
			M. S.	M. S.	S. C.	S. C.	S. C.
Gurdaspur ...	23	18½	7 7	4 1	31 13	15 3	1 14
Chhanga Manga	2	2	1 9½	0 29	7 2	1 15	3 9
Lyallpur ...	1	1	0 22½	0 15¼	3 2	1 1½	3 2

It will be noticed that, although it was thought that the cocoons were dry when they were despatched, such was not really the case. The additional loss in weight was least with the Lyallpur cocoons. The total percentage of loss in dryage of green cocoons has been 75 in the case of Chhanga Manga and 66 in the case of Lyallpur. The Gurdaspur cocoons arrived in a somewhat mildewed state owing to imperfect dryage. The report of Messrs. Anderson and Wright is as follows :—

" The Chhanga Manga silk have given the best produce. Also the quality and colour of the silk (pale yellow) seem superior to the other lots. Lyallpur comes next so far as produce is concerned, but the quality and colour of the silk (a bastard greenish yellow) do not appear equal to the other two. The produce from Gurdaspur is not as good as the others, due to a large extent to the cocoons being damaged. Otherwise the outturn would probably have been equal to the Lyallpur rearing. The quality and colour (pale yellow) are nearly as good as the Chhanga Manga silk. The cocoons are not as big as Kashmir cocoons, nor do they contain as much produce, but they are better shaped. "

Besides being of better quality, the Chhanga Manga produce was the highest per ounce of seed hatched. The Gurdaspur rate is very much lower. There is always a suspicion that the Gurdaspur rearers may have kept back some of their cocoons. But the Chhanga Munga food supply was by far the most abundant and the easiest available, and the arrangements made at Chhanga Manga and Lyallpur were much superior to those of the Gurdaspur rearers in spite of repeated injunctions. The Gurdaspur rearers certainly did not give their worms enough leaf. They did not keep their silkworms warm enough in the early stages, and the space provided was generally very inadequate. When the valuations are received, it will be apparent how much has been lost by the Gurdaspur rearers by inattention to elementary points in the management of silkworms. Definite conclusions must be deferred until valuations are received. But it is satisfactory to find that Shaikh Ghulam Sadiq, Honorary Magistrate of Amritsar, who tried six ounces of seed at Sujanpur and who is reeling his own silk, was so favourably impressed by the results obtained with disease-free eggs, that he has taken over the operations in Gurdaspur and Kangra next year as a private enterprise, obtaining two hundred ounces of eggs from France through the Department. He proposes to reel all the silk himself, and he will also probably make an offer to the Forest Department for a further experiment at Chhanga Manga. The outturn of cocoons per ounce with disease-free eggs was far greater than with country eggs. The local methods of management in Gurdaspur are defective in many respects, and an endeavour will be made next year to demonstrate the advantages of better arrangements for rearing in Gurdaspur. I am greatly indebted to Mr. Kennaway for the close attention which he devoted to the Gurdaspur experiment. My thanks are also due to the Forest Department, to Mr. Milne, Economic Botanist, Punjab, and to the Kashmir Sericultural Department for their assistance.

Apiculture.

40. Thanks to the personal interest and lead of His Honour the Lieutenant-Governor, a very promising start has been made with bee-keeping in Simla on scientific and up-to-date principles. There is a good strain of bees in the Simla Hills, remarkable for their docility and for the quality of their honey, and bee-keeping with rough and ready methods is very general among natives and not uncommon among Europeans. Frame hives and modern appliances were first introduced by the Lieutenant-Governor at Barnes Court, and these were almost immediately taken up by a large number of European residents who have formed an association with Sir Louis Dane as patron. Mr. Carson, Assistant Professor of Entomology, was able to give very valuable help to the members of the Association in all the details of bee-keeping.

Part V.—Miscellaneous.

Pusa Bulletin XIV of 1908 on the milling and baking qualities of Indian wheats.

41. The facts brought forward in Pusa bulletin No. XIV of 1908 by Mr. and Mrs. Howard on the milling and baking qualities of Indian wheats are of extreme importance to the Punjab. They can, however, only be adverted to very briefly in this Report. Prior to the issue of this bulletin the prevailing impression was that Indian wheats were generally "weak" and that only the soft Indian white wheats which are weak wheats were suitable for export to England. By 'strength' is meant "the capacity for making large and well-shaped loaves," and the 'strength' of a flour is usually in proportion to its nitrogen content. The idea that the best Indian wheats are the soft white, which are weak wheats, was based on the report of Messrs. McDougal Brothers in 1882, and on the circumstance that white "Delhi" wheat was formerly shipped with a much lower percentage of barley and dirt admixture than white "Karachi." Another consideration which kept hard wheats out of the market was that the older milling processes were not capable of dealing with the harder Indian wheats. Accordingly, exporters have pursued the policy of stipulating for soft white wheats, or for a mixture consisting chiefly of "soft white," and have placed a premium on these qualities. In response, cultivators have grown white wheats specially for the market, although the climate and soil of the Punjab are better adapted to the stronger varieties which are generally hard red. Mr. and Mrs. Howard, after classifying the wheats of Northern India, had analyses made of the various varieties and sent samples of the principal kinds for milling and baking tests to Mr. Humphries, Chairman of the Committee of the Incorporated National Association of British and Irish Millers. The results of analysis and the report of Mr. Humphries show conclusively that some of our hard red varieties are much 'stronger' than the 'soft white' and are much superior to them from the English miller's point of view. The analyses cited in the bulletin establish that the stronger wheats contain 50 per cent. more nitrogen than the weaker white varieties. It has already been stated that the soft white wheats do not really suit the Province. It may be mentioned that the harder and stronger wheats are those which are preferred by cultivators for their own consumption, as they are found to be more sustaining. The grain, too, is much more resistant to weevil. It is obvious, then, that the Punjab cultivator and the trade are losing owing to the misconception as to the possibilities of wheat growing in the Punjab. I have addressed the Karachi Chamber of Commerce, the Incorporated National Association of British and Irish Millers and the Liverpool Corn Trade Association with a view to ascertaining why a premium is still offered for the apparently inferior wheat, and I have pointed out that a premium on what are really the strongest and best varieties or mixtures would result in a few years in the almost complete disappearance of soft white wheats. The matter is solely and entirely in the hands of the trade as the cultivator will grow whatever commands the best price. Thus far, replies have been received from the first two associations. The revolution in milling machinery now enables millers to deal with hard wheats as easily as soft wheats. The Karachi Chamber of Commerce consider that there is every reason to believe that many up-to-date millers now prefer the harder and stronger "Karachi" wheats and they are of the opinion that the harder and stronger wheats such as those recommended by Mr. Humphries are of the higher milling value. Both the Karachi Chamber

of Commerce and the Association of British and Irish Millers, however, state that white wheat is still preferred in some sections of the milling industry, although there is no doubt but that this preference for colour is only justified when other considerations are equal. The Karachi Chamber of Commerce consider that there is little doubt that the demand for stronger Indian wheats will make itself felt, although it is not to be expected that the demand for softer wheats will cease at once. The trade custom will certainly be slow in changing. But it is to be hoped that the exporters and English millers will co-operate in promoting what is as much to their interest as to that of the cultivators, for all concerned must gain in dealing with a more valuable product. In the meantime, all that can be done is to keep the matter before the public, and I propose to print the correspondence as a bulletin. It is impossible to say what sum is at stake. But the importance of the question can be judged from the circumstance that each additional anna per maund on an export of one million tons means £116,666. We shall have the strongest and the best of the local wheats isolated at Lyallpur, but they will never be taken up by the agricultural community unless they can be sold for more than the wheats which are now in demand.

Grain elevators.

42. The subject of grain elevators, particularly in connection with wheat, came up for consideration on the appointment of a special commission by the Railway Board to enquire into the matter. With the prospect of an addition, when the new canals are opened, of at least half a million tons to our average annual export of a million tons, the question is one that affects the Punjab very closely. Punjab wheat at present suffers from being exported with a substantial admixture of foreign grains and dust. An immediate result of the introduction of the elevator system would be that our wheat would be placed in the European markets in a much better condition, as elevators provide machinery for cleaning and for separating foreign grains. This would benefit the entire trade from the exporter to the grower. Other advantages would include the cheapening and facilitating of handling, safer storage against bad weather and thieves, possible greater protection against weevil and, to a certain extent, easier and more economical railway working. It seems doubtful if the rush of wheat to Karachi in June, July and August would be much reduced.

Enquiry into changes in the rainfall and underground water table.

43. An exhaustive enquiry has been made as to whether there is any permanent change apparent in the annual rainfall or in the underground water table. The rainfall question has been dealt with by Dr. Walker, Director-General of Observatories, and he finds that there is no proof of any climatic change. There has been a tendency over a large part of North-West India for rainfall—

(*a*) to increase to a maximum between 1892 and 1894,

(*b*) to sink to a minimum in 1899,

(*c*) to improve very slowly since that time.

Dr. Walker adduces good reasons for holding that any changes in North-West India must be attributed to something abnormal in the large movements of the atmosphere and not to local extensions of irrigation or to deforestation. The investigation of the water table was made through district officers. It is apparent that there has been a certain drop in the water level in the last 14 years of deficient rainfall. The average subsidence is from 2 to $3\frac{1}{2}$ feet in the Jullundur district and this figure can probably be accepted for the Province as a whole in tracts unaffected by canals. An important inference which stands out is that the scanty Punjab rainfall in the plains does not affect the water level to any extent, and that the principal factor in the supply of subsoil water is the supply of water in rivers, streams and canals. If this view is correct, then the ultimate cause of change is rainfall in the hills, in the catchment areas of the Punjab rivers. The desideratum being a steady reliable and ample flow in the rivers in their course through the plains, the importance of forests in the catchment areas with their influence on the intensity of the rainfall in the hills and on the storage of water cannot be over-estimated.

Agricultural Associations.

44. The Lyallpur Agricultural Association held two well attended meetings, at one of which the Financial Commissioner, Sir James Wilson, was present. Useful discussions took place on subjects of local importance and visits were paid to the Agricultural Station where demonstrations of new implements and machines were given. The "Townsend" Agricultural Association in Hissar has continued to devote its attention mainly to the improvement of stock. About 100 inferior bulls were removed during the year and four camel stallions purchased by private subscription were at work. No applications were received for the formation of new associations during the year. It is hoped that the establishment of an Agricultural Station in Jullundur will be the signal for the organisation of an association in that district.

Shows of agricultural produce and implements. See Section X of Appendix V.

45. Four shows of agricultural produce were held this year, at Lyallpur, Ferozepore, Ambala and Karnal, the last named being held for the first time. All these shows were attended by the Deputy Director. New implements were exhibited working at Lyallpur, Jalalabad and Karnal. As we now have a compact collection of improved implements and machines, arrangements will be made to give demonstrations next winter at a certain number of selected cattle fairs in districts in which improved implements are most likely to be taken into use.

District Gardens.

46. The accounts for the year ending March 31st, 1909, of the four gardens noticed annually in this report are as follows :—

	Income.	Expenditure.
	Rs.	Rs.
Shahdara	1,082	8,256
Shalimar	3,477	4,816
Kudsia	1,267	1,850
Roshanara	4,166	2,500

The Mahasu orchards.

47. The arrangements for the management of the Mahasu orchards and the issue of young fruit trees for fruit-culture in the hills remain unchanged. Applications were received for 8,232 fruit trees and 3,253 were actually supplied.

W. RENOUF, C. S.,

Director of Agriculture, Punjab.

APPENDIX I.

REPORT ON THE ADMINISTRATION OF THE LYALLPUR AGRICULTURAL STATION FOR 1908-09.

SECTION UNDER THE PROFESSOR OF AGRICULTURE.

1. During the year under report, the botanical and the agricultural work have been separated. This necessitated the modification of experiments already in existence and the commencement of new experiments. The Farm area of 450 acres is now utilized as follows:—

	Acres.
Experiments controlled by the Professor of Agriculture	110
Experiments controlled by the Economic Botanist	70
Farmed by tenants	270

2. Schemes have been made with a view to the improvement of Punjab poultry and it is expected that the poultry houses will shortly be erected by the Public Works Department.

3. A scheme for a dairy has been worked out and is under consideration, the idea being to have a model dairy which will supply the agricultural suburb of Lyallpur.

4. The experimental work which is being conducted on the Farm is set out in a permanent cropping scheme, which has been approved after discussion by the other professional members of this Department. This scheme will lend continuity to the experimental work.

5. The land set apart for experiment has been suitably divided up into areas each of about one acre in extent, in some cases 2 acres. Comparative cultivation and manurial experiments are being carried out on these areas which are oblong plots and arranged alternately alongside each other. The plots have been made as large as possible so as to give reliable results. The chief experiments are for testing:—

(*a*) Various methods of cultivation.

(*b*) Use of new machinery.

(*c*) Green manures.

(*d*) Fertilizers.

(*e*) Water requirements of staple crops.

6. During the year, interest in the Farm has markedly increased among the landowners and cultivators. The number of visitors has steadily increased and the machinery used on the Farm has become popular among many of those people who have purchased implements.

7. The expenditure for the year ending March 1909 was Rs. 11,111-12-6 and the income Rs. 6,315-0-10 as against Rs. 9,195-2-3 and Rs. 4,424-11-6 for the year 1907-08.

The increase in expenditure was due to the extra labour employed in laying out experimental plots and levelling which is so essential on irrigated land, also to the increased rate of wages in the neighbourhood and expenditure on implements and machinery. The increased income is due to the slightly greater area of the Farm and enhanced yields and prices.

8. An attempt has been made to replace temporary labour engaged on the farm by permanent monthly paid labour, but the rates as sanctioned at present are not sufficient to attract and retain the right class of labourers.

H. H. CORBIN,

Professor of Agriculture, Punjab, Lyallpur.

SECTION UNDER THE ECONOMIC BOTANIST.

1. The experimental work has been greatly hampered for want of suitable lands, stores and a sufficient number of agricultural and other assistants. About 70 acres of land formerly attached to the Lyallpur Experimental Farm under the Professor of Agriculture has now, however, been put under my charge for experimental purposes. About 30 acres of this is being laid out for growing cottons and wheats. A few acres of it are being prepared for fruit experiments, and more will be set aside for this purpose when necessary. The remainder of the land will be used for growing the various other crops which will have to be dealt with.

Experimental area.

2. Necessary field stores and fittings have been designed for the section.

Field stores.

3. Pucca water inlets have been designed to prevent as far as possible stray seeds getting into the experimental plots and to avoid the havoc wrought to plots by labourers closing up the present katcha inlets.

Water inlets.

Agricultural Assistants.

4. The number of Agricultural Assistants which I have had have been quite insufficient to enable me to deal properly with the work in hand. The men, however, have done their very best to assist me both in and out of working hours, and we have been able to keep things going and do something towards the organisation of the work.

Cottons.

5. About 1,000 varieties and selections of cottons have been dealt with. These have been systematically arranged and systems of recording the characteristics of the plants and of judging the merits of selections have been introduced. About two-third of the above number of cottons have been discarded this year after examination. Two types of American cottons and one desi variety which gave promising results have been handed over to the Professor of Agriculture to be tested on a large scale before being sent out to the zamindars. Tree cottons and African cottons have proved of no use here and the Egyptian cottons have done very poorly. A survey of the cottons of the Punjab has been started.

Wheats.

6. About 7½ acres of land were occupied by the experimental wheats. The cultivations and waterings were those given by the ordinary zamindars of the district. A standard variety (Daudkhani of Delhi) was sown at intervals to check the evenness of the quality of the land. A system of recording notes similar to that used in the case of cottons has been introduced.

Australian wheats.

7. About 20 varieties of Australian wheat were grown. As a rule they were not as good yielders as the indigenous wheats.

Indigenous wheats.

8. About 200 selections of indigenous wheats were grown separately. Of these the beardless common wheats with red glumes gave the best outturns and lodged less than others.

Classified Punjab wheats.

9. The 25 types of wheats classified by the Imperial Economic Botanist were grown on as large areas as we had seed for. A proportion of the seed of the best of these varieties will be handed over to the Farm to be further tested before being distributed to zamindars.

Jute.

10. The crop was badly damaged by the jute semilooper caterpillar (Cosmophila sabulifera). Four plots were sown at different dates from 10th April to 5th July. They all ripened in the end of September. The crop requires water about once in every two weeks. In the retting experiments, as good results were got from the ordinary zamindari pit as from the cemented tanks. A batch of jute put into a tank about 1st October requires about 1 month to ret. Even the damaged crop of this year produced fibre which will find a ready sale in Calcutta and probably would do so to a limited extent locally also. Further work is being done on jute.

Other crops.

11. Barley, oats, gram, cassavas, etc., were also grown.

D. MILNE,

Economic Botanist, Punjab.

APPENDIX II.

ANNUAL REPORT OF PROFESSOR OF AGRICULTURE, PUNJAB, FOR THE YEAR 1908-1909.

1. My work in the Punjab commenced on September 3rd, 1908. I took up the duties of Professor of Agriculture and also officiated as Deputy Director of Agriculture, Punjab.

(i). An office has been organised under my control and deals with the ordinary business in connection with the agricultural work of the college besides matters relating to work outside in the district. This office does the accounts and correspondence in connection with the Machinery Depôt.

Work done during the year.

2. For short periods of time an Agricultural Assistant has been lent to the Agricultural Section of the College and has occupied himself in collecting specimens for use in lectures and demonstrations and he has made investigations into the conditions of land and crop outside the Farm.

3. Much of my time during the cooler months has been occupied in trials of implements and devising new machinery to suit the Agricultural conditions prevailing here.

4. New methods of sowing and after cultivation have been experimented with on the Farm crops. It would be quite profitable for a man with a little capital to sow his crop in lines and buy machines for inter-cultivation. Further details are given in the report on the Farm.

5. Many visitors interested in improvement in agriculture have come to the Farm for advice and to see the implements and machinery recommended by the Department. I have personally conducted many of these visitors round the Farm and shown them he various points of interest.

6. During the year under report the administration of the Farm has been under my control and experiments of such a nature as to require several years before definite results will be obtainable from them, have been put on record in a permanent cropping scheme.

7. The improvement of poultry in the Punjab has been taken in hand and a few breeds of fowls have been obtained to experiment with, but progress cannot be made until proper pens are constructed. It is hoped that these poultry pens will be ready soon.

8. A scheme for a dairy has been elaborated, the idea being to have a model dairy which will supply the agricultural suburb of Lyallpur.

9. Several demonstrations of the use of our improved methods, implements and machinery have been held in the Province with the result that a number of progressive land-owners and cultivators have purchased appliances from the depôt.

10. About ten acres of land has been set apart for the students of the college to cultivate with their own hands.

11. The Machinery Depôt has been organised and is now in running order. The policy of the depôt is to supply the demand for agricultural appliances until there is sufficient business to make it worth the while of a commercial firm to step in and carrying on the work of an agent. A certain number of machines as detailed below have been ordered from Europe and America and have been sold in the Punjab.

	Name of appliances.	Number sold.	Cost of each
			Rs. a. p.
(1).	Winnowing machines to separate bhusa and grain	20	150 0 0
(2).	Ploughs (Canadian make)	42	26 8 0
(3).	Chaff cutters (English make)...	88	44 0 0
(4).	Bullock hoes (American make)	22	39 9 0
(5).	Large cultivators (American make)	2	200 0 0
(6).	Hand hoes of planet junior pattern (American make) ...	4	35 8 0

Any purchaser, before taking delivery of any appliance, is invited to come to the Farm and see his appliance working and to learn how best to adjust, &c. Many purchasers either come themselves or send their men to be trained. The demand for reapers and ploughs seems to be steadily increasing, and if more outside demonstration be quietly given on land which is lent by any zamindar for the purpose, I think that there is likely to be a much greater demand. Large demonstrations do not seem to be so successful as small exhibitions of really good work on the land of a purchaser.

12. Since joining my appointment I have toured in the various parts of the Punjab on inspection duty and have seen the general conditions prevailing amongst agriculturists of the Punjab. I inspected many fields of cotton which had been grown from seed previously selected and I reported on this subject to the Director. I made an extensive tour collecting information concerning poppy cultivation in the Punjab and took Botanical specimens of the various poppies under cultivation and wrote a report on this and the extraction and preparation of Punjab grown opium. In addition to the above much of my attention has been taken up in routine office work and accounts.

Tours.

H. H. CORBIN,

Professor of Agriculture, Punjab, Lyallpur.

APPENDIX III.

REPORT ON THE PROVINCIAL WORK OF THE ECONOMIC BOTANIST, PUNJAB, FOR 1908-09.

Botanical Section.

1. Some 3,900 miles were travelled by rail and 40 miles by road. This includes tours to the Hissar and Satgodha districts to inspect the cottons growing there and also tours in connection with the introduction of cassavas. A great deal of the touring was also done in connection with the College fittings, selection of staff and acquiring information regarding the proposed teaching collection of plants and fruits experiments.

Tours.

2. Experimental plots of cassavas from various parts of the world have been put down at Rewari, Ambala, Gurdaspur as well as at Lyallpur, to discover whether the plant can be successfully grown in the Province. Some information will be to hand by December 1909.

Cassavas.

3. With a view to discovering whether zemindars in districts where colocynths grow wild could add a little to their income from these, enquiries were made at Karachi, Calcutta and London as to prices and the state of the general market. The information received is that all these places are already over-supplied.

Colocynths.

4. Fruits of Withania Coagulans have been enquired after, for commercial purposes, by a German Firm in London. Samples have been supplied to them.

Withania coagulans (panir).

5. Various other plants have been collected and supplied by request to firms in India and abroad. Advice and assistance as far as possible has also been given on request to various people.

Miscellaneous.

Entomological Section.

6. One ounce of silkworms' eggs were obtained from France, through the Director of Sericulture, Kashmir. Hatching commenced on 3rd and continued till 8th March. Practically all the eggs hatched out. The latest of the worms completed seripositing by the 26th April. A heat wave about the middle of April had a somewhat deleterious effect on the worms. To avoid the risk of such happenings here, it is important to obtain varieties of mulberry that will come into leaf as early in the spring as possible. The outturn of green cocoons was 48¼ seers which yielded 25⅛ seers dry cocoons. The cocoons have been sent to be reeled at a filature in Eastern Bengal, and up to date no further information regarding them is to hand. The results, I think, are very satisfactory for a climate like Lyallpur.

Silkworm rearing experiment.

7. On the Lyallpur Agricultural Station, the damaged bolls in the cotton fields in July, 1908, were about 2 per cent., in August, 1·14 per cent. and in October, 16 per cent. while the number of worms in the damaged bolls ranged from 1 per cent. to 3·7 per cent. The cotton fields in several places in the Multan, Montgomery and Lyallpur districts were also examined. They showed little or no damage.

Cotton bollworm.

8. Experiments showed that if the land was flooded while the crop was tall, a great many of the caterpillars would escape from the water by climbing up the plants. It also showed, however, that flooding the land would be very effective if the crop was cut before the water was applied, or if it was short enough to be completely covered by the water.

Lucerne caterpillars.

9. Other insect attacks dealt with were jute caterpillar (cosmophila sabulifera) on jute, stem borer (chilo simplex) on jowar and sugar-cane, earcockle (tylenchus tritica) on wheat, green fly and painted bug (bagrada picta) on cruciferous crops, &c., &c.

Other insect attacks.

D. MILNE,
Economic Botanist, Punjab.

APPENDIX IV.

ANNUAL REPORT OF THE AGRICULTURAL CHEMIST, PUNJAB, FOR THE YEAR 1908-09.

1. In reviewing the work of the Agricultural Chemist for the year ending July 31st, 1909, I have to again point out that this work has been seriously hampered by the want of proper laboratory accommodation and staff. The former difficulty will, I think, soon be a thing of the past for I hope to be in a position to start in the research laboratory towards the end of September, if the gas, water and drainage systems are in working order by the 10th of that month. But the latter cause of delay is a much more serious difficulty since it has been found impossible to obtain assistants possessing the requisite educational qualification on the present sanctioned scale of pay. I am making this the subject of a separate note.

Prefatory.

2. Two subjects only of chemical importance have been taken up during the year. One is the systematic examination of the alkali soils of Northern India and the other is the analysis of sugar in connection with the testing of the Hadi plant at Lyallpur. The chemical examination of the alkali soils was commenced at Pusa last autumn but had to be suspended on my return to Lyallpur, and since then I have not had the opportunity of resuming this work. As by far the greater part of these analyses still remain to be carried out before the investigation can be completed, and in view of the importance of the subject, it is advisable for me to be provided with the requisite staff to carry on this work to the stage of completion at as early a date as possible. After my return to Lyallpur the available resources of the laboratory were utilised in carrying out the chemical work connected with the testing of the Hadi sugar-making process. This work is not yet complete, but there seems every indication that the process is not one which we can recommend for use in the Punjab.

Chemical work.

3. Temporary accommodation was provided for me in the Chemistry Block during the months of February, March and April but these quarters had to be again handed over to the Public Works Department in May for the purpose of laying down water piping and drainage. The laboratories will not be available for use until both these and the gas installation are complete, which, I understand, will be by the 1st of September.

The laboratories.

4. A systematic course of instruction in Chemistry and Physics has been under consideration and preparations made to commence the course as soon as the laboratories and lecture theatres are available. In connection with the course in Chemistry, I anticipate that for some years to come the lectures will have to be given entirely by the head of the chemical section for it is of the greatest importance that a thoroughly sound course should be laid down, the weak points discovered and eliminated, and the whole thoroughly systematised before the Assistant Professor takes up any of this work. A certain proportion of the lectures will always have to be given by the Professor but during the first few years I foresee that the whole of this work will fall on his shoulders. It will be necessary also for the Professor of Chemistry to deliver the lectures on Physics for at least the first year. I do not consider that one Assistant Professor is an adequate staff for the teaching of Chemistry and Physics, and I propose to bring this subject up again in a separate note.

College courses in Chemistry and Physics.

5. During the past year, by far the greater part of my time has been taken up with office work connected with the combined duties of Agricultural Chemist and Principal of the College. A large proportion of this work has had to do with the College buildings, fittings and the supplementary schemes in connection with the College. Even when these are finished the duties of the Principalship will add so materially to my work and will make such calls upon my time that my duties as Chemist will be seriously interfered with and it is with a view to the importance of the latter that I would advise the strengthening of the Chemical staff be given careful consideration during the forthcoming year.

Office.

J. H. BARNES,

Agricultural Chemist, Punjab.

APPENDIX V.

ANNUAL REPORT OF THE DEPUTY DIRECTOR OF AGRICULTURE, PUNJAB, FOR THE YEAR 1908-09.

1. As an annual report of this kind ought to be mainly of the nature of a progress report, I propose to follow the usual practice of noting briefly on the main undertakings of the section immediately under my charge. Where any new work has been undertaken, mention has been made of this.

I.—*Introduction of Reaping Machines.*

2. The progress of this undertaking has been the subject matter of a special note already submitted to Government.

3. Summarised briefly, it may be stated that the undertaking has this year been placed on a commercial footing by the firm of Volkart Brothers accepting an Agency for agricultural machinery, and that such marked improvements have been made in the pattern of machine in the way of increasing its efficiency and diminishing its draught as to bring it within the scope of the smaller zemindars of the Colonies. The business side of the concern was run this year by the firm in question with marked success and relieved the Department of a great deal of the financial trouble experienced last year.

4. The courses of instruction for *lohars* and *mistries* inaugurated last year and confined to lessons on the care and use of the machines were this year expanded into a more useful course by the production of actual harvesting conditions made possible by the sowing of an early barley crop for the purpose. These instructions proved very popular and fully justified themselves in the final results obtained in the Districts.

5. The following items of interest may be noted :—

(a).—*Numbers sold.*—The firm sold during the season 49 machines, of which four went to other provinces. The distribution owing to priority of indentry was not all that could be desired, only 25 being used in the Lyallpur district. Lyallpur zemindars will not book early. The result was that this year a good deal of disappointment was felt amongst people who came in at the last moment and found all the machines sold.

(b).—*General results.*—As in last year, the most satisfactory results were obtained in the Lyallpur district, where, without exception, the machines were successfully used.

(c).—*Daily averages.*—The real gauge of success may at once be measured by the average daily cuttings; last year's figures in Lyallpur district gave five killas per day, which was at the time considered satisfactory. This year's average in the same district shows a 30 per cent. increase, being 6·5 killas (7·2 acres).

(*d*).—*Labour employed.*—The average for this year works out at 1·75 per killa, the same figure as last year, but represents a marked improvement, as the crop was at least 30 per cent. heavier.

(*e*).—*Quality of the work.*—The average quality of the work shows a very marked advance on anything I have yet seen in the country, notwithstanding the heavy crops encountered. All the old complaints as to high cutting, loss of ears, etc., have disappeared, and users are quite satisfied that such drawbacks are due to careless handling on their own part.

(*f*).—*Profit and loss.*—It has been freely anknowledged all round that the profit has this year amounted to 100 per cent. on the outlay.

6 Summarizing, it may be stated that with the present arrangements for distribution and reasonable facilities given by the Department for instruction in their care and use, there is every prospect of the successful use of such machines over a large part of the Colonies. On the whole, it requires a fairly intelligent and persevering man to run a machine successfully, but it is quite apparent to all acquainted with the Lyallpur District that there is a very large proportion of zemindars with the necessary enterprize and ability.

II.—Acclimatised American Cotton.

7. As stated in last year's report, the area under this crop showed a marked decrease on the year 1907-08 doubtless mainly due to its comparative failure in 1907, the area in the Jhelum and Chenab Colonies being 445 and 142 killas respectively.

8. Last season, the swing of the pendulum proved in favour of the exotic for while the *desi* crop was on the whole poor, the American variety gave about a normal yield. This may be to a large extent accounted for by the character of the season, although a fresh importation of seed from Dharwar had doubtless a beneficial effect.

9. The usual assistance was given to growers in the way of advice as to cultivation, etc., and the arrangements for marketing were carried through by the Department. The distribution of seed was effected through the Colonization Officer, Sargodha.

10. A new way of disposal, *viz.*, by public sales was this year adopted, partly on account of complaints regarding our previous arrangements and partly to more correctly estimate the value of the American kapas in an open market.

11. Two public auctions were accordingly held on November 20th, 1908, and January 10th, 1909, when over 2,200 maunds of kapas were disposed of. The prices obtained were on the whole satisfactory, representing a premium of Rs. 1-5-3 and Rs. 1-9-0 p.m on the price of the *desi* article on the same days, but there was a disappointing lack of competition for the kapas, in spite of a great deal of canvassing and advertisement by the Department. The chief reasons for this are not far to seek. In the first place, the spinner is used to buying ginned cotton and not kapas and deals directly with the ginning factories in whose hands the whole of the selling trade lies. Secondly, the quantity offered for sale was really too small for the majority of spinners. Although this class of cotton meets a ready market in the Bombay Presidency, the market for it in the Punjab is limited, or, to be more accurate, is confined practically to one firm in Lahore. Further, the local ginning factories, which in the present state of the trade would naturally be the buyers of kapas, are averse to dealing with small quantities, which not only give them a lot of trouble to gin, but for which they are not quite certain of a ready market.

12. The marketing of the produce, therefore, will continue to give a good deal of trouble. There seems to me only one way out of the difficulty for the enterprise in the Jhelum Colony and that is a strong syndicate composed of growers, owners of ginning factories and spinners, formed with the object of growing acclimatized cotton.

13. This is not possible at present, as our breed of cotton requires very considerable improvement and adaptation to drought conditions before any real expansion in cultivation can take place. There ought to be, and I think there is, a considerable demand in India for this class of cotton if properly ginned and baled and put on the market in good condition. Personally, I am convinced that our department unaided will not prove equal to the task of putting this and similar ventures on a sound commercial basis and I put forward the suggestion as a possible means for the solution of a problem which is bound to become increasingly urgent.

14. It has been customary hitherto to give an estimate profit and loss statement of the crop viewed from the stand-point of the grower.

15. The following would approximately represent the profit on one killa for the year 1908, grown with American Cotton in the Jhelum Colony as compared with the ordinary *desi* crop :—

	Rs.	a.	p.
American cotton, 6 maunds at Rs. 7-6	44	4	0
Desi, 4 maunds at Rs. 6-0	24	0	0
Difference	20	4	0

which probably represents the best return yet obtained since the introduction of the crop. The profit per killa for the Chenab Colony would be about Rs. 10 per acre, the difference being due to a lower price obtained through inferiority of sample and to less difference in the yield between the two varieties.

16. *Sowings in* 1909.—The sowings for this year in both colonies show an increase of 487 killas, the figures being :—

	1908.	1909.
Jhelum Colony	... 445	631
Chenab Colony	... 142	423
Total	... 587	1,054

III.—Reh.

17. This question has, much to my regret, unfortunately had to be partially shelved owing to the non-completion of the Chemical laboratory at Lyallpur. It is to be hoped that the Agricultural Chemist will be able to make some headway with his necessary preliminary investigations this year. An important step was taken at the Agricultural Conference at Nagpur this year in the formation of a small committee to ensure the proper co-ordination of the work on reh, which is being undertaken in the most of the Provinces in India, and the consequent acceleration of practical results from thorough scientific investigation.

IV.—Hadi's Sugar-making Plant.

18. As mentioned in last year's report the demonstration carried out at Banga in February, 1908, could, by no means, be called successful and considerable doubt was expressed, if, in spite of the fact that the crop operated upon was a very poor one in quality, the plant could be made to pay in the Punjab even in normal seasons.

19. The plant was, therefore, with the approval of Government transferred to Lyallpur for closer observation. An excellent scheme for the rapid testing of its economic value for the whole of the Province was suggested by the Agricultural Chemist, Punjab. The main idea was to, first of all, test its relative efficiency on the Lyallpur cane crop and by a series of estimations of the average sugar contents of the chief cane-growing tracts to be able to state from the data of expenditure, etc., gathered from actual conditions whether the plant would have paid in any other district.

20. Unfortunately, only the former part of the scheme could be carried out as amongst breakages incurred in transit of the new Chemical Apparatus, the very instruments required for the purpose suffered serious damage and could not be repaired in the country. The Agricultural Chemist could, therefore, only test the relative efficiency of the plant, and that by a series of laborious analyses. As the full results are not to hand, I regret that they are not available for this report, but will be furnished in a separate note on the subject. I have, however, the results of the practical tests and may briefly state them here.

21. It may be noted that the crop this year was a good one, and would rank quite above that of average years.

22. The plant was this year worked during the day only and the working was directed mainly to suit the requirements of the Chemical analysis going on. The period of working was thus spread over a longer period than would have been necessary and the plant could not be, therefore, said to have been economically worked. The net loss to Government was, however, kept down by the almost exclusive use of farm labour on the crushing and boiling plants. Centrifugalling was done at its lowest possible cost by a system of labour contract which answered very well for the purpose. The estimate of expenditure for crushing and boiling given is based on actual conditions.

23. It may be at once stated that even working under the most economical conditions the plant could not have been made to pay. The forecasts based on last year's experience have been very accurately borne out.

24. These are briefly :—

(*a*). The high price of gur in the Province will not permit of obtaining the raw material at anything approaching Mr. Hadi's figures, quoted in his Bulletin No. 19, U. P., Agricultural Department.

(*b*). Labour in the Punjab is much above Mr. Hadi's estimates.

(*c*). The percentage of sugar to juice obtained by this process even in the best crops is far below Mr. Hadi's estimate for the United Provinces.

25. At the present stage and until the chemical examination has been completed, I do not wish to say much. It is, however, quite evident that Punjab conditions are not nearly so favourable for such a plant as those of the United Provinces, and the advantage of sugar as opposed to gur-making is not very apparent from the point of view of the zemindars. Both the cost of labour and the price of gur seem to have gone up permanently—possibly the former as a result of the latter. The quality of sugarcane very probably, has if anything, deteriorated. Refined sugar has fallen in

price. The result is that sugar-making as an industry has practically become extinct in the Province and it would appear from our experience that something more efficient than the Hadi process would be required to restore it. Very probably gur-making is more suitable for the country as a whole, as it fills a definite place in the food supply of the people and the average man is possibly better off in eating the molasses in gur than drinking it as country spirit. From the point of view of the zemindar the price of gur is unaffected by foreign sugar supplies, and in a bad year the high prices prevailing enable him to some extent to make up for the deficiency in outturn.

V.—Winnowing Machines.

26. It is very important that a good winnowing machine for wheat should be brought out, as it is almost certain that a demand for such will follow on the adoption of reaping machines. Some progress has this year been made towards this end and a machine specially built for the purpose has given double the efficiency of the best make previously tried. The actual figures, which a trial on last year's bhusa promised, have not been attained, owing to the abnormally coarse bhusa produced this year. Winnowing by the country process was equally tedious, but the advantages of the machine were not shown up, as they would have been in a normal year.

27. It is perhaps lucky that we should have encountered an exceptional year at the outset, as it is clear that alterations will have to be made to meet such emergencies. Late rains like those we had in the end of April this year will always have a similar effect on the bhusa. A new design to meet any emergency has been worked out by me and it is to be hoped that it will prove satisfactory, but the question is full of difficulties, and any low-priced machine suitable for the people of this country will necessarily have to be a compromise. The want of Agricultural Engineers is very actually felt in dealing with such a case. The great difficulties, which we have encountered this summer in testing the various determining factors and the crude methods we had to employ, compared with the facilities offered to me last year at home by an Agricultural Engineering firm constitute a great handicap to the carrying out of any important improvement in this country.

VI.—Trial of Steam Threshing Plant at Lyallpur.

28. The advantages of efficient and economic threshing by machinery in a great wheat producing Province like this are apparent to any one acquainted with the ordinary country methods. Some makers of steam threshing plants in England have for some years back tried with little success to introduce their machinery into the country. Messrs. Marshall and Sons, of Gainsborough, two years ago conducted trials near Multan. Not being satisfied with the result they have again this year with commendable enterprise returned to charge. The Department offered assistance at Lyallpur and provided the Farm crop of wheat and barley for experiment.

29. The firm's report on the trials promised some time ago, has not been received and their opinion as to the results are thus not as yet available for publication. Although the machine was successful in producing a good sample of both grain and bhusa, it is very evident that the heavy capital outlay on such plants, involving, as it does, a proportionally heavy charge for interest and depreciation combined with a short working season militates severely against their economic success. It is, however, better to reserve any definite opinion until the report of the firm is forthcoming.

VII.—Chrome leather of charsas for wells.

30. The question of giving a fair trial to "chrome leather" charsas has been taken up at the instigation of the Financial Commissioner, Punjab. Some years ago a few of these were distributed to Deputy Commissioners for trial, but the movement never got beyond its initial stages owing to their being condemned by the zamindars who used them. This year a few charsas have been distributed privately to zamindars in the Nawashehr tahsil of Jullundur. Trials are not complete, but it is satisfactory to note that those distributed are all doing well up to date.

VIII.—Distribution of castor cake for manurial purposes.

31. Small quantities of castor cake for manurial purposes have been distributed free of charge through the Deputy Commissioners of Jullundur, Hoshiarpur and Gurdaspur to selected zamindars. No previous trials of any value have been made at the Experimental Station, but castor cake has been used for some years near Lahore and found to be satisfactory. This is a case in which no harm can be done by such a distribution in the event of the users not deriving material benefit from the manure. In the event of success there is no reason why the available cake which at present is consigned from Lahore to Bombay for manurial puposes should not be used up in the Province.

IX.—Advice to Court of Wards Estates.

32. The question of adopting the advice given by the Board of Agriculture Meeting at Pusa in 1905 that the local Departments might undertake the "demonstration of high farming methods in the Court of Wards estates" has lately been the subject-matter of some correspondence, and it has been decided that action on the part of our Department should be confined to that of advising, where this can be done with advantage,

33. I have been able to make a start with the Mamdot estate, where the question of grass eradication has become a serious one both for the Estate and its tenants. Experiments with ploughing the land with deep furrow-turning ploughs have been started and, if successful, the estate ought to be able to bring back into cultivation many thousands of acres which have recently lapsed into grass. This will, in all probability, have to be carried out by means of steam tackle, as the draught necessary to cut and turn the extremely thick and tough sod which has rapidly developed, would be quite outside the capacity of the ordinary country cattle.

X.—Produce shows at Cattle Fairs and working exhibition of Implements, etc.

34. Several cattle fairs have now attached to them Agricultural Produce Shows. I attended four of these last cold weather. Possibly too much importance can easily be placed on such exhibitions and a great deal should not be expected of them. Failure to arouse enthusiasm over agricultural produce shows should not be considered a sign of want of enterprise on the part of the population as similar affairs rouse very little interest even in the best farmed counties at home. The true agriculturist will always take more interest in his live-stock and his crops than in seed and grain.

35. A small collection of implements has been sent to several fairs and on the whole has been the centre of a good deal of interest. I think cattle fair committees might well consider the advisability of developing this side. Possibly private firms, if encouraged, would be glad of the opportunity of exhibiting their machinery. The general effect would be perhaps more valuable as an educational factor than anything else. There is little doubt but what the excellent displays of implements at the more important cattle shows at home have done quite a lot to lessen the conservatism of the British farmer. Great care should, however, be taken in giving working exhibition of the Government agricultural implements and machines, and it should not be forgotten that in the presence of large crowds such are never seen at their best, and that any attempt to rush this section will end disastrously to those engaged in it.

XI.—The Jullundur Agricultural Station.

36. The land for the site of this station has already been acquired and rough plans and estimates for buildings, etc., have been prepared.

37. The land will be got as rapidly as possible into proper shape for comparative experiments, and I trust that no side issues will be allowed to interfere with this very necessary work.

XII.—Enquiry regarding fodder scarcity in the South-Eastern Punjab.

38. I regret that this enquiry has had to be postponed owing to the want of staff.

XIII.—General.

39. The work of the year can, on the whole, I think, be stated as fairly satisfactory. Complete failure has to be recorded with the sugar plant, but the Department has never approved of it, and it must not be forgotten that we were originally ordered to demonstrate it. The American cotton has had a good year, but I am not very sanguine as to its future. Otherwise we are on the whole on fairly sound lines. We have made a further step towards gaining the confidence of the Lyallpur zamindars by our success with reapers, etc., and have considerably increased our clientele, and if care is taken not to destroy this confidence by unduly pushing things, I think, in a short time we will have quite a large enough connection to be able to dispense with the demonstration farms, areas, etc., which have been found necessary in other Provinces to advertise agricultural improvements.

40. The chief need of this section of the Department is at present an adequate and properly trained staff of assistants, and I regret that several important questions which might lead to valuable results cannot be undertaken at present.

41. The above programme has been carried on by me practically unaided. I have from time to time had the services of two Agricultural Assistants, who have both worked conscientiously and to the best of their ability.

S. MILLIGAN,
Deputy Director of Agriculture,
Punjab.

APPENDIX VI.

ANNUAL REPORT OF THE PRINCIPAL, PUNJAB AGRICULTURAL COLLEGE, LYALLPUR, FOR THE YEAR ENDING JULY 31ST, 1909.

Prefatory.

1. I have but few points of interest to call attention to in my work as Principal of the College during the past year as the buildings are still in the hands of the Public Works Department. The greater part of my time has, however, been occupied with the College and its internal organisation, with the various subsidiary schemes now under construction or consideration and with the laying out of the College estate.

2. As I understand that the Director of Agriculture has dealt with the College buildings and their accessories in his report I shall pass on to the consideration of other points of interest. In the first place, efforts have been made under very adverse conditions to bring as much of the College grounds as possible under cultivation, though up to the present we have been unable to obtain control of more than a limited area, the bulk of the ground being still occupied with building materials. I anticipate it will take at least 12 months to clear up the whole estate and put it in order.

Grounds.

3. The Boarding House has been furnished and preparations made for its occupation by the students. It was intended to open the College on the 20th of July, but unfortunately neither the laboratories nor lecture theatres could be got ready by that date, and we had therefore to postpone the opening until the 1st of September when it is hoped all necessary accommodation will be available. A great deal of interest has been, and is being, taken in the College throughout the Province and I have had over 5,000 enquiries about the educational course and the terms of entrance, many from genuine candidates for admission.

The opening of the College.

4. An Entrance Scholarships Examination for the 10 vacant divisional scholarships was held in the College buildings in the beginning of May. One-hundred and thirty-five candidates appeared in this competition examination and over 400 applications were received for the remaining six vacancies—a sufficient indication of the outside interest displayed in the College. Some of the points mentioned in the Examiners' report are of particular interest as bearing on our future work. No difficulty was experienced by the Examiners in allotting the scholarships, the successful candidates in every case being a long way ahead of the unsuccessful competitors. These successful candidates appeared on the whole to be a suitable class of students for the course which is to be given at Lyallpur, but with regard to the general run of the candidates Mr. Milligan remarks in his report that they could in no way be considered to possess a high enough standard of elementary education to benefit by the course of instruction set down in the College syllabus. I consider that the results of this examination have a very important bearing on our efforts to reach and maintain the standard we have set ourselves in the Punjab Diploma of Agriculture. I propose to make this matter the subject of special investigation and report. Another point of interest brought out in the Examiners' report was that in the oral examination a large number of candidates showed but a scanty acquaintance with indigenous farming operations. As these candidates were supposed to belong to the agricultural and landowning classes it is clear that the terms of admission will require some modification, and that the comparative value of the oral to the rest of the examination will have to be raised, otherwise the course from the agricultural point of view will require lengthening.

Entrance Scholarships.

5. There are at present four Assistant Professors on the staff—three have recently joined and one is still undergoing training at Pusa. I cannot report on their work as yet, but I anticipate that some years must elapse before the Indian Assistant Professors will be able to take a full share of the teaching duties and in the meantime these duties must fall heavily on the shoulders of the European staff.

Staff.

6. The office work during the past year has increased very considerably and, though the staff has been added to by one librarian who helps in the accounts work, I find this section is still overworked.

Office.

J. H. BARNES,

Principal, Punjab Agricultural College,

Lyallpur.

PUNJAB LAND RECORD DEPARTMENT

REPORT FOR 1909-10.

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REPORT

ON THE

OPERATIONS OF THE DEPARTMENT

OF

LAND RECORDS,

PUNJAB,

***For** the year ending 30th September* **1910.**

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No. 31 (Rev. & Agri.—Rev.).

FROM

H. P. TOLLINTON, ESQUIRE, I.C.S.,
Revenue Secretary to Government,
Punjab and its Dependencies,

TO

THE SENIOR SECRETARY TO THE FINANCIAL COMMISSIONERS, PUNJAB.

Dated Lahore, 14th February 1911.

Revenue and Agriculture.

Revenue.

SIR,

I AM directed to acknowledge the receipt of the annual report of the Department of Land Records, which was submitted with your letter No. 27, dated 13th January 1911.

2. The marked increase in the number of patwaris who belong to agricultural tribes is satisfactory, though it is doubtless due in part to the inclusion of Gaur Brahmans in this category. The proportion of patwaris who have agricultural connexions can hardly fail to rise still further, in view of the fact that of the new candidates, 394 belong to agricultural tribes as against 257 who do not. The percentage of patwaris who have passed the Middle School examination continues to increase slowly but steadily, and now stands at 44 as compared with 35 six years ago. It is to be hoped that Deputy Commissioners will not consciously lower the educational standard, as the Director suggests some Deputy Commissioners are inclined to do.

3. The Lieutenant-Governor has read with interest Mr. Hamilton's remarks on patwarkhanas. While the importance of compelling patwaris to live within their charges is admitted by everyone, the necessity for building a patwarkhana in every circle has yet to be established. In Rawalpindi, where there are no patwarkhanas at all, the patwaris are reported to be resident in their circles, and the Lieutenant-Governor is not prepared, without good cause shown, to surrender the position which was tentatively adopted in last year's review, that in prosperous and settled tracts it is the moral duty of the landowners to facilitate the acquisition of a residence for their patwari, as in practice they often do. Any comprehensive scheme for the provision of *pacca* houses for patwaris throughout the province is outside the range of practical policy, but His Honour agrees with the Director that, after careful enquiries, such sums as may be available should be expended year by year on the construction and maintenance of patwarkhanas in circles where unofficial accommodation is hard to obtain.

4. The prospect of a general increase in patwaris' pay is equally remote, and when patwaris are found, as at present, to decline promotion as kanungos, it is far from certain that the present scale is inadequate, but His Honour would gladly further their prospects of promotion. The Director stigmatises patwarship as a "miserable service." When only 12 patwaris out of 8,797 are promoted to kanungo in a year, the epithet is not extravagant, and I am to

request that the attention of district officers may be drawn to the orders of Government which require that two posts of kanungo out of every three should be given to patwaris.

5. In this connexion the Lieutenant-Governor is constrained to notice the persistent apathy of district officers, and the lack of interest, which it is to be feared too many of them show, in the important Department of Land Records. The Director remarks that the pay and housing of patwaris are the only subjects in which Deputy Commissioners take personal interest. If this is the case, it is greatly to be regretted. The First Financial Commissioner has recently been enabled to enquire into the possibility of improving our system of land records, especially with regard to the worry and harassment of a general revision of records at settlement, and has come to the conclusion that the Punjab system is in some respects better than that in force elsewhere, but that improvement is needed in the local agency responsible for its working. In both these conclusions Sir Louis Dane concurs, and he trusts that the Financial Commissioners will take active measures to ensure improvement. In the past it was recognised that once the settlement of a district was completed the subordinate revenue staff relapsed into comparative indolence until the next settlement when a large establishment was put on to revise the records. In this way short periods of harassment and strain alternated with longer periods of reaction and neglect.

6. This is clearly the wrong system, and the Lieutenant-Governor believes that greater efficiency may be attained under a more equable pressure. The great increase in the revenue record staff, the special training of tahsildars, and the appointment of Revenue Assistants and of a Director of Land Records with Assistants were intended to ensure that the work should be kept up regularly, and it is disappointing to find that notwithstanding the great extra cost entailed on Government, and the constant touring of officers, more success has not been attained. An important step in this direction is Mr. Douie's scheme (which has already been noticed in the Review of the Settlement Report) for bringing the records and maps of a district up to date in anticipation of the coming settlement. There seems to be no reason why this system should not be extended until the contrast between the standing record and the annual record disappears, and both are merged in a permanent record which is kept up to date as part of the ordinary revenue administration of each district. That this would simplify re-assessment, and reduce the troubles connected with it, is beyond question.

7. The Lieutenant-Governor is confident that an approximation to this ideal is not impossible. The first step towards it is to stimulate the interest of district officers in record work. His Honour has learned with surprise that the Financial Commissioner's new instructions for the preparation of *jama-bandis* have been neglected in many districts. No doubt this is due to the pressure of other duties, but if their own leisure is scanty, district officers should at least realise the importance of interesting their assistants in this branch of revenue work. They have been authorised where possible to create sub-divisions and to place one of their Assistants in charge of each such sub-division. There is no better training for Assistant Commissioners or Extra Assistant Commissioners than a course of inspections—both in field and office—of the revenue record work of a tahsil or sub-division. Greater interest shown in their work will assuredly improve the work of patwaris and kanungos, besides enabling the inspecting officer, to select among them those who are fitted for promotion. Sir Louis Dane believes that improvements in the status of the patwar service and the prospects of patwaris are more likely of attainment in this way than through comprehensive schemes of housing and re-grading, which while greatly increasing the cost may leave the morale of the service on the same level as at present.

8. The Financial Commissioner has commented on the figures relating to partitions and mutations. It is disappointing that the extra naib tahsildars

on mutation work have not shown a better outturn. His Honour would persevere with the experiment of empowering selected kanungos in this behalf, if only on the ground that any mark of distinction from his fellows serves to stimulate a man's energies ; but he would ask Commissioners to satisfy themselves that the extra help provided is properly utilised, and that the ordinary tahsildars and naib tahsildars are not neglecting their important duties in this branch of the administration.

9. The Lieutenant-Governor wishes to thank Mr. Hamilton for the zeal with which he has supervised the revenue record work and for an interesting report. The point that stands out in nearly every paragraph of it is the need for more supervision by district officers, and His Honour trusts that this will engage the attention of the Financial Commissioners.

I have, &c.,

H. P. TOLLINTON,

Revenue Secretary to Government, Punjab.

Punjab Government Press, Lahore—23-2-11—2618—300—K. C. M.

No. 27.

FINANCIAL COMMISSIONERS' OFFICE,
LAHORE, *dated* 13*th January* 1911.

FROM

E. R. ABBOTT, ESQUIRE,
Senior Secretary to the Financial Commissioners, Punjab,

To

THE HON'BLE MR. M. W. FENTON, C.S.I.,
Chief Secretary to Government, Punjab.

The Hon'ble Mr. J. M. Douie, C.S.I.

SIR,

I AM directed to forward a copy of a letter No. 2961, dated the 14th December 1910, from the Director of Industries and Land Records, Punjab, covering his annual report on his department for the year ending 30th September 1910, with a separate note containing the comments of the 1st Financial Commissioner.

Sub-head 491 B.
File No. 54.

2. A copy of a note by the 1st Financial Commissioner, with a draft of instruction for map correction, is also enclosed for information.

I have, etc.,

E. R. ABBOTT,
Senior Secretary to the Financial Commissioners, Punjab.

NOTE BY THE HON'BLE MR. J. M. DOUIE, C. S. I., FIRST FINANCIAL COMMISSIONER, PUNJAB, ON THE ANNUAL REPORT OF THE DEPARTMENT OF THE DIRECTOR OF LAND RECORDS, PUNJAB FOR THE YEAR ENDING 30TH SEPTEMBER 1910.

1. The *patwari* staff now amounts to about 8,800 persons and the average cost for salaries is Rs. 11, or, if assistants are excluded, Rs. 12 per mensem. In the 17th paragraph of his report, Mr. Hamilton has alluded to measures that have already been taken to improve the records of rights, and to others which are in hand aiming at the much more difficult ideal of a village map kept up to date. Draft instructions for map correction have been circulated. A copy is enclosed for the information of Government. The main object of these measures is to save the people from the trouble involved in elaborate revisions of maps and records when a district comes under re-assessment. But the Government has also a large pecuniary stake in their success. If we demand, as we certainly are demanding, a higher standard of work from our *patwaris* and *kanungos*, we must be prepared to pay them somewhat better wages. I know that we must cut our coat according to our cloth, and that only modest measures are possible, seeing that a *lakh* of rupees is required to add one rupee to the monthly pay of each *patwari*. It is satisfactory that the increased share of the new mutation fees, allowed to *patwaris* will seemingly on the average raise their income by this sum, but more is needed if I and my successors are to be given the means of carrying out the declared policy of Government that the maps and records must, in the intervals between general re-assessments, be maintained in such a state that no special revisions shall be required.

2. When reporting on the suggestions of the Decentralization Commission regarding the powers of Financial Commissioners, I submitted certain proposals. These will now be sent up separately, as permitted by the orders in paragraph 2 of Mr. Humphreys' letter No. 361, dated 10th December 1910. Measures are being adopted for the reduction of a large part of the staff of revenue *patwaris* in canal colonies, and I propose to make use of any savings thus effected to raise the pay of *patwaris* in Gujrat, where special measures for map correction are being carried out in anticipation of re-assessment eighteen months hence.

3. In most districts, members of agricultural tribes have now a fair share of *patwari* appointments. They ought not to have a monopoly. The rule that two out of three *kanungo* posts should be given to *patwaris* has not been carried out in Karnal, Ferozepore and Jhang, and has also perhaps been broken in Kangra, Multan and Dera Ghazi Khan. Breaches of the rule requiring assistant *patwaris* to be employed in the field are noted in the 10th paragraph of the report. Call for explanation will be made in all these cases.

4. There are very few districts in which the number of *kanungo* candidates is not excessive according to the standard of 50 per cent. for sanctioned posts now laid down (paragraph 2 of Standing Order No. 19). Great care must therefore be taken in enlisting fresh recruits. The worst cases are :—

Hissar	...	...	...	43	candidates to	22 posts.
Jullundur	...	...	...	23	„	20 posts.
Gurgaon	...	...	...	21	„	24 posts.

The Deputy Commissioners of these districts will be asked what measures they intend to take to reform their lists. The new rule requires that two-thirds of the *kanungo* candidates must be *patwaris*. But in the districts noted on the margin, the present proportion is less than one-half. Orders will issue forbidding the recruitment of any but *patwari* candates in these districts for the next two years. It is disappointing to find that promotions of *kanungos* to higher posts were confined to six cases and four districts. But the only superior posts for which good *kanungos* have by their training an obvious fitness are those of district *kanungo* and *naib-tahsildar*. As a matter of fact there is a fair number of *kanungos* on the divisional list of *naib-tahsildar* candidates.

Hissar, Karnal, Ambala, Kangra, Gurdaspur, Jhelum and Dera Ghazi Khan.

5. Mr. Hamilton has dealt at length with the question of *patwarkhanas*, which is in a very unsatisfactory state. If, as I have suggested, the Financial Commissioners are made fully responsible for the *patwari* and *kanungo* agency being provided with the necessary funds, they would also become responsible for all contingent expenditure under the same heads including the cost of keeping up *patwarkhanas*.

6. One would have expected that the measures referred to in paragraphs 17 and 20 of the report would have led to an increase in the number of mutations. On the contrary, there is a decrease of 25,500 in the number written up by *patwaris* and of 42,000 in the number attested. If we excluded Delhi and Rohtak where the mutations instituted have fallen by 33,000 and the mutations attested by 51,500, the result would be different. In the last year of settlement operations in these two districts the *patwaris* were no doubt much occupied with *bachh* and other work. The attention of the Commissioner will be called to the necessity of seeing that any leeway is now made up.

7. Although the number of attested mutations has declined, it still amounted to the large figure of 793,535. In the United Provinces the districts shewing the largest returns are Saharanpur and Meerut with about 15,000 each, and the total in that province is approximately 2½ lakhs, giving an average of 5,000 per district. In the Punjab the corresponding average is 27,000, the highest figures for the present year being 79,927 in Ludhiana, 72,454 in Gurdaspur, and 53,476 in Hoshiarpur. These figures of course reflect the wide difference between the land tenures of the two provinces.

8. The fact that in some of the recent settlements in the United Provinces special revision of records has been dispensed with made it advisable to see whether this province could again, as in the past, borrow from its neighbour improvements in its revenue system. Accordingly, I have recently made enquiries in Lucknow and Saharanpur, and have discussed the question with Mr Moreland, Director of Land Records, and Mr. D. C. Baillie, Member of the Board of Revenue. I have come to the conclusion that our own system of attesting mutations is much better than that in force in the United Provinces, where the parties have to attend at the tahsil office when there is no dispute, and first at the tahsil and then at the sub-divisional officer's office when there is one. In the Punjab, with its enormous number of transactions such a plan would lay on the people an intolerable burden. I did not gather that the present system of map correction was regarded as very satisfactory, and a change is being introduced. The fact that in some re-settlements no special revision of records has taken place loses much of its significance when it is found that the cases mostly come from Oudh, a country of large estates in which permanent tenant right hardly exists. Expert opinion in the United Provinces seems to be opposed to the idea that in the province of Agra, where the tenures approach more nearly to those with which we are familiar, special revisions can be foregone. My own opinion is that if we are prepared to spend a moderate amount in improving our district record agency, we ought in the Punjab to be able to reduce special revisional work at settlement to a minimum.

J. M. DOUIE.

9th January 1911.

No. 2961.

Dated the 14th December 1910.

FROM

W. S. HAMILTON, ESQUIRE, C.S.,

Director of Industries and Land Records, Punjab.

To

E. R. ABBOTT, ESQUIRE,

Senior Secretary to the Financial Commissioner, Punjab.

SIR,

I have the honour to forward herewith, for favour of review and transmission to the Local Government, seven advance copies of the report on the Department of Land Records, Punjab, for the year ending 30th September 1910.

I have, &c.,

W. S. HAMILTON,

Director of Industries and Land Records, Punjab.

ANNUAL REPORT

ON THE

DEPARTMENT OF LAND RECORDS, PUNJAB,

For the year ending 30th September 1910.

1. I have been Director of Land Records throughout the year except for the first fortnight. I was on tour for 145 days and inspected three offices of sadr kanungos and the records in 15 tahsils either in the office or more generally by attestation on the spot. My Personal Assistants inspected seven headquarter offices and 43 tahsils between them. These figures are much lower than in the previous year, but this is due not to slackness but to deliberate restraint, as there was some over inspection to be worked off.

Tours and inspections.

2. The Naib Tahsildars' examination was held in August; 70 candidates appeared of whom 36 belonged to the Punjab, 18 to the Frontier Province and 16 to native states. Thirty-three men passed completely and the remainder in one or more subjects. The native states' candidates are much less well trained than Government candidates and only 4 passed out of 16.

Naib Tahsildars' examination.

3. The number of new patwari candidates accepted during the year was 651 compared with 997 and 812 in the two preceding years. The reduction appears to be due mainly to the avoidance by deputy commissioners of recruitment of large numbers at one time, to which I have objected on several occasions. But at the same time there is a growing difficulty in obtaining suitable candidates for patwarships, which daily become less attractive as the work demanded is elaborated and the remuneration obtainable in other spheres rises with rapid strides. It is for this reason that the number of candidates is inconveniently small in Jhang and Lyallpur. In Ambala and Jullundur the dearth of candidates appears to be due to other temporary causes. Of the new candidates 394 belong to agricultural tribes and 257 do not, the same proportion as last year. Half of those belonging to agricultural tribes have not passed the middle school examination; while of the non-agriculturists all but 73, most of whom are relatives of patwaris and therefore specially qualified, have passed the middle school test.

Patwari candidates.

The total number of patwari candidates has fallen from 2,769 last year to 2,671 this year. The only district in which they are now in excess is Dera Ghazi Khan where 74 men were enlisted and an examination held. Of the total 1,543 or 57 per cent. have passed the middle school or higher examination and 1,595 or 59 per cent. belong to agricultural tribes. The proportion of men who have passed the middle school examination has again fallen, but the percentage belonging to agricultural tribes has risen by 6. As stated last year, the improvement is really only a change in the classification of Gaur Brahmins. Apparently in Rohtak about 60 out of the total staff of patwaris (262) are Gaur Brahmins and in Gurgaon about 90 out of 332 belong to the same tribe. These are not the genuine agriculturists whom we wish to see more largely employed as patwaris.

4. Most of the candidates have passed the patwari examination. Schools were held last year in Hoshiarpur, Ludhiana, Lahore, Sialkot and Montgomery districts. In Rawalpindi it appears that the examination and passing of candidates were carried out without any school. I do not think this system is likely to turn out adequately trained men; in fact a school without an examination would be better than an examination without a school. There should be schools during the present year in Rohtak, Gurgaon, Ambala, Attock, Jhang and Multan, where the numbers of unpassed candidates are large.

Patwari schools.

Patwaris.

5. The new patwaris appointed numbered 423 and exactly half of them were of agricultural tribes—again including Gaur Brahmins and Syads. We have thus—in the province as a whole at least—reached the balance of conflicting claims which has been aimed at, but in certain districts, notably Ludhiana and all the districts of the Lahore division, the non-agiculturists still largely exceed the agriculturists. The total number of patwaris has risen by 7 to 8,797, the increases being 5 in Karnal and 2 in Lyallpur. Forty-four per cent. have passed the entrance or middle school examination and 34 per cent. are of agricultural tribes. Both percentages have risen from 43 and 29.

It is extraordinary that in Rawalpindi and Gujrat there should be only 45 patwaris out of 231 and 54 out of 244, respectively, who have passed the middle school examination. Perhaps official idiosyncrasies rather than educational backwardness afford the explanation.

Pay of patwaris.

6. There has been no improvement in the pay of patwaris. In the Rohtak district alone the pay of the 1st grade patwaris has been raised from Rs. 14 to Rs. 15 and a reduced number of assistant patwaris have been given Rs. 8 instead of Rs. 5 the month.

If I do not discuss the need of improvement it is not because the matter has lost any of its urgency. But I hope the facts are recognized and the scale of pay will be raised as soon as the financial condition of the province opens the way. Assuming that the figures in statement V are correct (see paragraph 11) the savings accruing to the provincial Government out of the Government of India grant for patwari and kanungo establishment amount to over a lakh of rupees in the year which is even greater than last year and would go some way towards raising the rates of pay.

Conduct of patwaris.

7. The conduct of the patwaris is generally well spoken of. Dismissals amounted to 107, of which 26 were in Ludhiana and 10 each in Gurdaspur and Muzaffargarh. Two criminal cases were brought against one patwari in Sirsa but were dismissed; one Kangra patwari was convicted and imprisoned for forgery and one Montgomery man was imprisoned for bribery. These seem to have been the only criminal cases against patwaris, but, as several deputy commissioners remark, the chief offence is bribery and of that judicial proof is difficult to obtain. The most welcome opportunities for extortion occur when the patwari is approached for an extract from his papers or when he is requested to enter up a mutation. Only the growing sagacity of the peasant will reduce the yield from extracts; but closer supervision will diminish the profitableness of the mutation register. Especially effective will be the enforcement of paragraph 9 of Standing Order 15 which is not yet generally known; but I wish the punishment imposed therein were automatic and, as better fitting the crime, consisted of the loss of all share of the fees in the case of mutations not written up at once. Dismissal and reduction are too ponderous weapons for what is after all a minor offence and will be allowed to rust unused.

Patwarkhanas.

8. My remarks in last year's report as to the state of patwarkhanas have advanced matters a small step. In accordance with the orders of Government enquiries have been made from deputy commissioners as to the circles in which it is absolutely impossible to rent a house for the patwari and as to the cost of construction and maintenance of patwarkhanas. It is hoped that when this information has been collected it will be possible to set apart an annual sum for construction and repairs. I may note that this is the one question—apart from the pay of patwaris—connected with the land record department in which deputy commissioners seem to take considerable personal interest. I rather despair of anything much being done for new construction so long as there are so many houses of sun-dried bricks to be repaired. I would prefer fewer patwarkhanas and those to be built with burned bricks. We should then have a minimum amount spent on repairs and much more money available for new houses.

Ambala and Multan are the only districts in which for years past continued efforts have been made to keep the existing houses in repair, and even from them applications for funds for repairs are varied with requests for sanction to the rendition of the sites of ruined houses to the lambardars. Special efforts have been made in Kangra after the earthquake and in Rohtak, as part of the settlement operations, to repair and rebuild the patwaris' houses and in both districts they are now in good order. Constant watchfulness will be necessary to keep them so. The colonies have been or will be ~~will~~ supplied with houses. At the other end of the scale stands Rawalpindi which has no patwarkhanas at all, and it is satisfactory that notwithstanding this, all the patwaris are resident within their circles. The remarks of a few deputy commissioners may be quoted. The deputy commissioner of Delhi says, "Several patwarkhanas fell down during the heavy rains, as also because the rule regarding the residence of patwaris was in abeyance as usual at the close of settlement operations and their houses were neglected in consequence." From Hoshiarpur it is reported that the patwaris are often put to great inconvenience for want of proper accommodation and zamindars are with difficulty persuaded to let their houses to them; on which the commissioner notes: "The difficulty about residence for patwaris is yearly becoming more acute. When the patwari was a village servant, the zamindars did not object to provide him with suitable accommodation, but since he has become a Government servant, the villagers recognise no such responsibility." The deputy commissioners of Amritsar, Sialkot and Gujranwala all note the difficulty of compelling patwaris to reside within their circles when there are no houses for them and the commissioner remarks that the question still remains inadequately disposed of. The deputy commissioner of Gujrat gives some statistics which are typical of many districts:— "Only seven patwarkhanas are in good repair, 51 need repairs and 174 are in a dilapidated condition. It will be seen from last year's report on this point that then 22 patwarkhanas were in good repair, 49 needed repairs and 161 were reported to be in a dilapidated condition. From this it will be seen that there is a big drop in the number of patwarkhanas in good repair as compared with the past year and also a proportionate increase in the number reported to be in a dilapidated condition. Provision has been made in next year's budget for checking in some measure the rapid way in which patwarkhanas are falling out of repair, and if only liberal grants can be made towards their reconstruction, repair, etc., for some years to come the evil that now faces us, *viz.*, that of having uninhabitable patwarkhanas—will be averted. There is a certain degree of hardship in compelling a patwari to reside within his circle when there is no patwarkhana to live in, and punishment for this infringement of the rule does, at times, fall rather hard on the individual concerned." The deputy commissioner of Mianwali writes in the same tone:— "In some villages the patwarkhanas are in a ruinous state, in others there are none at all. So the patwaris fare as best they can in the matter of arranging house accommodation for themselves and their records. It is essential for efficient working that a patwari should live with his family in his circle. As he is now a Government servant it is necessary to have patwarkhanas in those circles where it is absolutely impossible to rent a house. In this district the greatest difficulty is experienced in getting any houses on rent, and pressure has to be brought on headmen and zaildars to secure any accommodation at all." The deputy commissioner of Montgomery says:— "For the efficient and prompt discharge of their duties by the patwaris it is no doubt essential that they should all reside in their circles. But in some circles the houses cannot be had even on rent, and to expect the patwaris, with their present emoluments, to make their own arrangements for housing themselves and their families and providing a separate room for their records and office work within their circles is perhaps too much." And the deputy commissioner of Lyallpur writes: "In certain parts of this district no accommodation for patwaris is available even on rent. As pointed out last year the residential sites allotted to the grantees in this district only suffice for their own requirements and they can therefore ill afford to let houses to patwaris to live in. The want of these houses increases the difficulty of compelling the patwaris to live in their circles—a point on which compulsion is absolutely necessary, as no partwari can do good work unless he remains in close touch with the persons he is to deal

with. If we are to enforce residence, the provision of proper abodes is desirable and should receive early attention." The commissioner of Multan regards the provision of patwarkhanás as "a matter of urgency in the interests of good administration."

Promotion of patwaris.

9. Only 12 patwaris obtained promotion to the post of kanungo, which shows what a miserable service patwarship is. Columns 3 and 4 of statement No. III indicate that the rule (Standing Order 19, paragraph 4) requiring that two kanungo posts out of every three should go to patwaris, has been generally disregarded. The need of finding places for a surplus of settlement kanungos ought not to have abrogated the rule. Only 15 other posts such as *wasilbaki nawis* and *siaha nawis*-ships in tahsils have gone to patwaris, though in addition some of them have officiated in such appointments. This is a very small allowance among nearly 9,000 men.

Employment of assistant patwaris.

10. Assistant patwaris are still being employed as assistants to the sadr kanungo or to office kanungos in Delhi, Amritsar, Sialkot, Montgomery and the Bhakkar tahsil of Mianwali, which is against the Financial Commissioner's orders. The assistants should be sent into the field, so that they may acquire a full knowledge of their duties.

Cost of patwari establishment.

11. The total expenditure on patwaris has been Rs. 12,83,519 or nearly half a lakh less than last year. Of the saving Rs. 18,000 are under "Salaries" and over Rs. 28,000 under "Stationery and Printing." I regret that these large variations in expenditure were not brought to my notice until I came to write this report and it was then too late to have them cleared up by correspondence. I shall now have this done. Ten districts shew decreases of more than Rs. 1,000 under salaries of which the largest are Rs. 5,000 in Lyallpur, Rs. 4,500 each in Ferozpur and Mianwali and Rs. 3,000 in Multan. What the explanation is I do not know unless it is that grade promotions among patwaris have been allowed to fall much in arrears. On the other hand there are large increases in Delhi (Rs. 7,000) and Shahpur (Rs. 1,700) due to arrears of pay and allowances having been given; and the same explanation possibly accounts for the increase in Muzaffargarh.

As to stationery and printing Rs. 24,850 were spent out of my reserve last year, and this year only Rs. 3,141, have been spent. The paper used for lithographic forms which cost Rs. 21,789 last year, is this year being paid for direct by deputy commissioners and their bills ought to shew an equivalent increase, but do not. Perhaps owing to the reduction of their budget allotment the bills are lying unpaid. For the rest, a sum of about Rs. 3,000 spent annually on settlement forms has now been transferred from my budget to the settlement commissioner's, and the cost of printing mutation registers, probably Rs. 6,000, has not yet been paid by me as the bill has not been sent in.

Kanungo candidates.

12. Only 35 new kanungo candidates, of whom 21 are patwaris, were accepted during the year. In 1908-09 there were 81. The decrease is in part due to the efforts made to reduce the useless superfluity of candidates in some districts, as is demonstrated by the drop in the total number of candidates from 427 to 406, but is also in part a consequence of the block in the appointment of kanungos caused by the absorption of excess settlement kanungos n district cadres. Far too small a proportion of the kanungo candidates continues to be recruited from amongst patwaris; patwari candidates and others being in the proportion of 58 : 42 instead of 66 : 33, as laid down in the Standing Orders. The neglect of patwaris is unhappily very general. Even when they are accepted as kanungo candidates, the men chosen are usually so old that they do not get appointments.

Kanungo examination.

13. Kanungo examinations were as usual held in all divisions of the province and also in Peshawar. 103 candidates appeared of whom 77 passed entirely and 18 failed entirely.

Kanungos.

14. The number of kanungos has risen from 595 to 599 by the increase of the cadres in Rohtak, Delhi and Karnal. There is a good deal of dissatisfaction expressed as to the work of the kanungos and my inspections convince me that the dissatisfaction is well founded. They are left very much to their own devices by their immediate superiors, the tahsildars, who often have not the knowledge necessary to control them, and in this country unsupervised work is usually scamped. The result is not only bad work but also deterioration in the character of the men who are tied down to a monotonous round out of which it is almost hopeless to expect to earn applause and advancement. The refusal of promotion and prospects to kanungos is not only a result but also a contributing cause of the dullness and lethargy of their work. Only six kanungos were promoted to higher posts during the year.

Sadr kanungos.

15. The touring of the sadr kanungos of Karnal, Lahore and Rawalpindi was quite inadequate and there are several other districts (Attock, Mianwali, Lyallpur and Jhang especially) in which the records would be in a better state if the sadr kanungos toured more. There is no excuse whatever to be made now-a-days for a sadr kanungo who does not spend nearly the whole of his time on tour. The figures given from Rawalpindi, Jhang and Dera Ghazi Khan for the number of villages tested by the sadr kanungo seem to be the offspring of megalomania.

Records of rights.

16. The new records of rights of the Hissar and Ludhiana districts have been finally attested : those of Rohtak and Delhi have been bound and filed : those of Gurdaspur are nearly complete. In Gurgaon a large number of old records have been rebound : in Umballa the 1852 records are now being rebound. Generally the records are reported to be in good condition.

Annual records.

17. The most important incident of the year has been the issue by the Financial Commisssioner of more stringent instructions as to the preparation of *jamabandis*, which find a place in paragraphs 31-35 of Standing Order 23. These instructions form part of the measures to be introduced in order to ensure such accuracy in our quadrennial returns that hesitation need no longer be felt in doing away with the re-writing of the records and the correction of the village maps now regarded as an essential part of the operations periodically undertaken for the revision of assessment. So essential a part of the settlement has the enormous labour of the revision been held that probably the ordinary villager dislikes a settlement much more because it entails a costly infliction of a swarm of patwaris and kanungos and naib-tahsildars than because it is the instrument for adding on a fraction to the rupee of revenue already paid. So the curtailment of the revision of the maps and records at settlement is the main object at present of those who control the department of Land Records and one of the precursory reforms is in the procedure for preparing *jamabandis*. The importance of this reform and perhaps even the reasons for it appear hardly to have appealed to district officers, for I know that in few districts has the new procedure been completely observed and I find that in many reports the subject is not mentioned at all. It is to be feared that as in the past year their novelty, so in the current year too the exacting distractions of a census, may delay still longer the adequate performance by tahsildars of the new duties laid upon them. In all 9,105 *jamabandis* were prepared and the very considerable proportion of 2,180 was checked by the deputy commissioner or the revenue assistant. But the care expended on the *jamabandis* varies in measure from only 3 checked in Sialkot, 7 in Gujranwala and 3 in Dera Ghazi Khan to 236 in Montgomery and 242 in Jullundur. If, as has been proposed, each tahsil is made the separate charge of an assistant collector of the 1st grade we may look for a closer, if less expert, supervision of the *jamabandis*.

One constant hindrance to the preparation and also to the attestation of a correct *jamabandi* arises from the non-attendance of the interested parties and matters seem in this respect to be going from bad to worse. Flagrant neglect to attend should be anticipated by action under section 149 of the Land Revenue Act.

The necessary measures to achieve greater accuracy in the supplementary village maps prepared every fourth year—documents which are in no degree less important than the *jamabandis* themselves—are still under the consideration of the Financial Commissioner. Detailed examination of the maps in Hoshiarpur, Gujrat and Sialkot is being undertaken this cold weather and there is every hope that their condition will justify a decision to limit the revision at settlement to the preparation of a new copy of the old map with the changes recorded at quadrennial attestation incorporated. Thus alteration of the field numbers and the preparation of khataunis will be avoided.

The Financial Commissioner's Standing Orders contain many new instructions, but these have not yet been acted up to and will not be fully observed until a vernacular manual is published. It is difficult enough for an English speaking officer to find his way about the various volumes through which the orders as to land records have been scattered, and a manual composed of extracts from the volume of Land Acts, from the Land Administration Manual, from the Settlement Manual and from the Standing Orders, is badly wanted both in English and in Urdu. The four volumes could then be deposited in the library for occasional reference only.

Partitions.

18. There were 12,757 partition cases for disposal and 8,426 have been decided—almost exactly the same number as last year. There remain the normal number of 4,331 pending. Large numbers were decided in Dera Ghazi Khan, Muzaffargarh, Gurdaspur, Jullundur and Kangra. From Dera Ghazi Khan 657 cases are reported to have affected only 392 acres, but the figures of area are so small that they must surely be wrong. There are vast numbers of private partitions in every district which have not been given effect to in the records. Far more of these should be brought to notice at quadrennial attestation than the patwari or kanungo at present find convenient.

Mutations.

19. There were 919,101 mutation cases for disposal—a few less than in the preceding year. Of these 793,535 were attested leaving a balance of 125,566. The disposals are fewer and the balance greater than in 1908-09 which is confirmation of the view that the *jamabandis* have not received much greater attention than heretofore. The heaviest work was in the Jullundur division and in Gurdaspur. There are enormous balances in Hoshiarpur (18,187) Sialkot (10,433) and Jullundur and Ferozepore (over 7,000 each).

Extra naib tahsildars were posted by commissioners to the districts where they were most needed, but the amount of work these men turn out is often absurdly small. In most cases the average outturn of an extra naib-tahsildar is no more than 20, 30 or 40 cases in a day, which is only about two or three hours' work. Even allowing for the inexperience of the officers usually selected as extra naib-tahsildars and the consequent need of caution, I think nothing less than 60 to 80 mutations a day, according to the greater or less proportion of contested cases, can be regarded as a fair task for an eight hours day.

Kanungos and mutations.

20. The empowering of selected kanungos does not appear to have given tahsildars much relief in mutation work. Further trial is necessary. I am not very keenly in favour of the experiment myself, as the kanungos have plenty of work of their own to do.

Mutation fees.

21. The complete figures are not yet available by which to judge how much more the new scale of mutation fees brings in and how far the remuneration of patwaris has been improved. So far as can be calculated from

the budget figures (which are actuals) the new scale has in ten months brought in about Rs. 17,000 more to Government and about Rs. 80,000 more to the patwaris. Revenue officers appear to have found considerable difficulty in properly assessing the new rates of fee more especially on rejected mutations. I am inclined to doubt whether after all the assessment of the rejected mutations to fee can be worked with equity.

Mutation work in districts recently settled.

22. It is a pity that the mutation work is so often allowed to fall in arrears at the close of settlement operations. When I inspected the newly settled Gurgaon district last January I found countless mutations not written up in almost every village I visited. Statistical proof that many of these old mutations have subsequently been entered is afforded by the rise in the number of institutions in the district from 24,861 in 1908-09 to 37,599 in 1909-10. The marked shrinkage in the institutions in 1909-10 in Rohtak (14,000 less than in 1908-09) and Delhi (19,000 less) suggest that perhaps in those districts too many mutations have not been written up. I shall have these districts inspected shortly.

Character of mutation work.

23. There is still much room for improvement in mutation work, the two chief faults being *ex-parte* decisions and the scrapping of troublesome old cases by summary rejection. The deputy commissioners of both Rohtak and Ambala note that many mutation orders had to be reviewed. But at the same time I think there has been undoubted improvement in the last few years, and erroneous mutation orders are usually detected, although it is hard to clear up all the mistakes committed by a wrong-headed naib-tahsildar in hurry.

Note-books.

24. Last year's report detailed the changes introduced in the village note-book forms. Yet another change has been brought about in the entire recasting of statement IV of revenue demand and collections. The books are generally up to date but not very accurate. The parganah note-books have not yet been collected in the sadr in all districts.

Survey marks.

25. Proper attention is being given to the maintenance and repair of Survey marks.

W. S. HAMILTON,

Director of Land Records, Punjab.

10*th December* 1910.

QUINQUENNIAL RETURN.

STATEMENT No. I.

TABLE SHOWING THE STATISTICS OF EXISTING PATWARI AND FIELD KANUNGO CIRCLES.

1	2	3	4	5	6	7	8	9	10	11	12	13
			Area and Revenue (00's omitted).					Average per Field Kanungo.		Average per Patwari.		
			Area in acres.									
District.	Number of Field Kanungos.	Number of Patwaris.	Total.	Cultivated.	Total assessment.	Number of fields.	Number of Khatauni holdings.	Fields.	Khatauni holdings.	Fields.	Khatauni holdings.	Remarks.
Hissar	15	306	33,138	26,949	8,248	489,380	290,630	32,625	19,377	1,599	950	
Rohtak	10	242	11,536	9,717	9,515	1,085,874	266,065	108,587	26,606	4,487	1,099	
Gurgaon	14	312	12,339	9,877	12,184	1,066,114	372,120	76,151	26,580	3,417	1,193	
Delhi	11	226	8,179	5,512	8,539	917,652	261,414	83,423	23,765	4,060	1,157	
Karnal	15	333	20,006	11,226	10,717	1,749,821	370,494	116,655	24,700	5,255	1,113	
Ambala	15	358	11,986	7,628	11,500	1,404,630	443,399	3,642	29,560	3,924	1,238	
Simla	1	8	490	99	175	49,840	10,376	49,840	10,376	6,230	1,297	
Kangra	16	316	24,689	5,856	9,264	2,192,055	444,851	137,003	27,803	6,937	1,408	
Hoshiarpur	20	461	14,282	7,370	14,272	3,053,491	838,420	152,675	41,921	6,624	1,819	
Jullundur	14	402	8,667	6,938	14,861	2,166,786	593,747	154,770	42,410	5,390	1,477	
Ludhiana	15	300	9,002	7,536	11,156	1,502,393	379,772	100,160	25,318	5,008	1,266	
Ferozepore	16	356	25,988	22,559	11,844	1,407,507	490,850	87,969	30,678	3,954	1,379	
Montgomery	13	201	28,924	7,853	4,075	881,086	198,403	67,776	15,262	4,383	987	
Lahore	17	343	23,060	14,566	11,656	1,933,219	451,702	113,719	26,571	5,636	1,317	
Amritsar	11	305	9,976	7,872	12,767	1,434,167	548,858	130,379	49,896	4,702	1,799	
Gurdaspur	17	426	11,668	8,392	15,374	1,586,699	610,772	93,335	35,928	3,725	1,431	
Sialkot	17	403	12,704	9,370	15,135	1,959,052	1,028,151	115,238	60,479	4,861	2,551	
Gujranwala	18	341	19,178	11,677	17,167	1,650,637	305,633	91,702	16,980	4,841	896	
Gujrat	19	232	12,391	8,432	8,426	1,198,761	462,102	119,876	46,210	5,167	1,992	
Shahpur	7	134	20,934	5,673	4,896	407,864	156,550	58,266	22,364	3,044	1,168	
Jhelum Canal Colony ...	10	155	10,952	6,917	4,340	1,020,621	74,434	102,062	7,443	6,585	480	
Jhelum	11	207	17,716	7,550	7,568	1,437,650	431,860	130,695	39,260	6,945	2,086	
Rawalpindi	12	231	13,125	6,017	6,724	1,185,994	375,764	98,833	31,314	5,134	1,627	
Attock	10	214	27,011	10,491	6,743	941,069	363,768	94,107	36,377	4,398	1,700	
Mianwali	20	249	49,913	7,781	3,978	864,193	250,529	43,210	12,526	3,471	1,006	
Lyallpur	16	293	22,897	15,650	7,428	2,105,863	10, 453	131,616	9,403	7,187	514	
Jhang	12	199	18,026	5,583	6,079	995,940	186,754	82,995	15,563	5,005	938	
Multan	21	338	38,115	10,948	9,539	1,164,073	206,620	55,432	9,839	3,444	611	
Muzaffargarh	22	270	20,211	5,545	6,722	1,039,464	297,342	47,248	13,516	3,850	1,101	
Dera Ghazi Khan ...	13	182	34,751	10,668	5,196	618,216	242,058	47,555	18,619	3,397	1,331	
Total ...	419	8,343	571,854	282,252	2,76,088	39,510,111	11,103,921	94,296	26,501	4,735	1,331	

Note.—This is quinquennial statement. It was prepared for the report for 1907-08.

STATEMENT No. II.

STATEMENT SHOWING THE EDUCATIONAL QUALIFICATIONS OF PATWARIS AND PATWARI CANDIDATES AND PUNISHMENTS AND PROMOTIONS OF PATWARIS FOR THE YEAR ENDING 30TH SEPTEMBER 1910.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	PATWARIS AND ASSISTANT PATWARIS.									CANDIDATES.							
DISTRICT.	Number.	*Number who have passed* The old Entrance or present Matriculation Examination of the University or higher examinations.	*Number who have passed* The old University Middle School or present Departmental Middle School Examination.	Total of columns 3 and 4.	Percentage of column 5 on column 2.	Number who belong to agricultural tribes.	Number dismissed.	Number reduced, suspended, or fined.	Number promoted to Kanungoships or other appointments.	Number.	Percentage of column 11 on column 2.	*Number who have passed* The old Entrance or present Matriculation Examination of the University or higher examinations.	*Number who have passed* The old University Middle School or present Departmental Middle School Examination.	Total of columns 13 and 14.	Number who belong to agricultural tribes.	Number who have passed the Patwari Examination.	REMARKS.
Hissar	331	5	99	104	31	106	6	46	3	99	31	1	39	40	43	61	
Rohtak	262	3	146	149	57	131	6	113	...	77	29	...	47	47	59	40	
Gurgaon	332	7	190	197	59	174	3	107	...	82	25	...	60	60	64	53	
Delhi	237	2	143	145	61	92	1	128	1	73	31	...	38	38	52	47	
Karnal	359	6	148	154	43	183	4	50	...	117	33	2	46	48	71	84	
Ambala	383	4	217	221	58	110	5	63	...	84	22	2	64	66	40	52	
Simla	9	...	...	...	...	9	...	...	...	5	55	...	...	...	5	2	
Kangra	316	...	88	88	28	227	1	42	1	120	38	3	87	90	91	80	
Hoshiarpur	481	11	246	257	53	227	5	40	...	154	32	6	122	128	99	153	
Jullundur	418	9	186	195	47	134	2	186	...	74	18	4	48	52	52	73	
Ludhiana	307	3	187	190	62	96	26	303	...	130	42	1	86	87	64	104	
Ferozepore	378	7	164	171	45	123	1	65	1	104	28	4	49	53	70	55	
Lahore	358	6	164	170	47	83	2	123	1	102	28	1	58	59	45	92	
Amritsar	325	4	171	175	54	68	4	184	...	130	40	5	95	100	69	106	
Gurdaspur	481	15	206	221	46	156	10	14	4	169	35	2	106	108	75	138	
Sialkot	425	11	143	154	36	128	...	77	2	106	25	1	45	46	71	93	
Gujranwala	364	7	174	181	50	63	3	141	2	98	27	2	54	56	51	38	
Gujrat	244	2	54	56	23	80	2	43	1	82	33	9	46	55	55	63	
Shahpur	291	...	80	80	27	70	...	94	2	75	26	1	32	33	46	55	
Jhelum	221	5	74	79	36	80	...	17	...	63	29	...	26	26	46	58	
Rawalpindi	231	...	45	45	19	102	1	48	4	79	34	1	24	25	61	60	
Attock	214	2	68	70	33	75	1	46	...	73	34	1	26	27	39	32	
Mianwali	186	6	76	82	44	55	2	71	...	61	33	...	23	23	22	61	
Montgomery	217	3	62	65	30	23	2	90	...	81	37	3	26	29	42	80	
Lyallpur	283	10	199	209	73	69	...	3	1	56	19	2	40	42	22	37	
Jhang	244	6	103	109	45	29	4	144	1	35	14	2	15	17	17	19	
Mooltan	363	7	147	154	42	91	1	172	1	121	33	7	69	76	68	76	
Muzaffargarh ...	348	8	135	143	41	118	10	145	2	111	32	3	46	49	70	110	
Dera Ghazi Khan ...	189	...	46	46	24	97	5	114	...	110	58	5	58	63	86	80	
Total ...	8,797	149	3,761	3,910	44	2,999	107	2,669	27	2,671	30	68	1,475	1,543	1,595	2,002	

STATEMENT No. III.

STATEMENT SHOWING EDUCATIONAL QUALIFICATIONS OF KANUNGOS AND KANUNGO CANDIDATES AND PROMOTIONS OF KANUNGOS FOR THE YEAR ENDING 30TH SEPTEMBER 1910.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	KANUNGOS.					KANUNGO CANDIDATES.									
DISTRICT.	Total number of Kanungos.	Number of Kanungo vacancies filled during the year.			Number of Kanungos promoted to Naib Tahsildarships or higher appointments during the year.	Total number of candidates on the list.			Percentage of column 9 on column 2.	Number who belong to agricultural tribes.	Number who have passed.		Number who have passed the Kanungo examination.	Number who have received Director's certificate of efficiency.	REMARKS.
		Given to Patwaris accepted under Rule 103 (*ii*).	Given to candidates accepted under Rule 103 (*iii*).	Total.		Accepted under Rule 103 (*ii*).	Accepted under Rule 103 (*iii*) or otherwise.	Total.			The old Entrance or Present Matriculation Examination of the University or higher examination.	The old University Middle School or present Departmental Middle School Examination.			
Hissar	22	3	2	5	...	21	22	43	196	14	21	21	37	25	
Rohtak	17	3	1	4	2	8	4	12	71	5	4	7	12	12	
Gurgaon	24	...	...	...	...	12	9	21	88	12	10	11	19	19	
Delhi	17	1	...	1	...	7	2	9	53	5	4	5	8	7	
Karnal	24	...	3	3	...	4	5	9	37	8	6	3	9	9	
Ambala	22	...	...	...	...	7	8	15	68	7	10	4	9	9	
Simla	2	...	...	...	...	1	...	1	50	1	...	1	1	1	
Kangra	25	...	1	1	...	6	7	13	52	8	7	1	12	12	
Hoshiarpur	26	...	...	...	...	10	5	15	58	8	7	8	13	13	
Jullundur	20	...	...	...	...	14	9	23	115	14	12	9	20	18	
Ludhiana	21	...	...	...	...	7	3	10	48	6	4	5	7	7	
Ferozepore	23	...	2	2	...	8	8	16	70	5	8	4	13	13	
Lahore	23	...	...	...	...	10	4	14	61	8	5	8	14	13	
Amritsar	16	...	...	...	...	8	4	12	75	4	5	7	8	8	
Gurdaspur	23	2	1	3	...	5	7	12	52	6	7	4	9	9	
Sialkot	24	...	...	...	...	10	6	16	67	8	8	3	14	14	
Gujranwala	24	1	...	1	1	10	3	13	54	3	7	2	12	12	
Gujrat	15	...	...	...	...	9	5	14	93	3	5	5	12	12	
Shahpur	23	...	...	...	...	7	1	8	35	6	1	4	7	7	
Jhelum	16	...	...	...	...	3	6	9	56	5	6	3	9	9	
Rawalpindi	18	2	...	2	2	6	5	11	61	4	5	5	5	5	
Attock	16	...	...	...	...	6	6	12	75	4	6	6	10	9	
Mianwali	20	...	...	...	...	7	7	14	70	10	7	5	12	7	
Montgomery	19	...	...	...	...	9	7	16	84	4	7	2	15	15	
Lyallpur	20	...	...	...	...	7	4	11	55	3	5	4	10	10	
Jhang	19	...	2	2	1	5	5	10	53	4	5	3	9	9	
Multan	28	...	1	1	...	12	6	18	64	4	11	7	16	16	
Muzaffargarh	33	...	...	...	...	14	6	20	61	11	8	10	15	15	
Dera Ghazi Khan ...	19	...	1	1	...	4	5	9	47	3	5	4	9	8	
Total ...	599	12	14	26	6	237	169	406	68	183	196	161	346	323	

STATEMENT

STATEMENT SHOWING THE WORKING OF THE LAND RECORD

1	2	3	4	5	6	7	8	9	10	11	12	13	14
		Mutations.					Partitions.						
District.	Number of villages.	Number pending from last year.	Number instituted.	Total for disposal.	Number attested.	Balance unattested at close of year.	Number pending from last year.	Number instituted.	Total for disposal.	Number decided.	Area in acres involved in decided cases.	Cultivated area in acres included in column 12.	Number of cases pending at close of year.
Hissar	1,007	5,641	29,857	35,498	32,179	3,319	167	281	448	312	104,240	94,842	136
Rohtak	532	404	15,990	16,394	14,448	1,946	114	171	285	222	14,193	12,776	63
Gurgaon	1,265	4,660	37,599	42,259	38,521	3,738	35	88	123	75	4,251	3,400	48
Delhi	773	1,117	11,605	12,722	8,257	4,465	92	209	301	154	4,694	4,112	147
Karnal	1,448	3,144	20,349	23,493	18,620	4,873	203	136	339	203	9,945	8,956	136
Ambala	1,798	2,096	31,234	33,330	30,726	2,604	107	165	272	205	3,438	2,434	67
Simla	25	66	1,005	1,071	960	111	4	9	13	7	76	43	6
Kangra	718	1,221	35,952	37,173	34,694	2,479	78	521	599	479	5,126	2,643	120
Hoshiarpur	2,179	8,833	62,830	71,663	53,476	18,187	220	402	622	379	9,893	5,719	243
Jullundur	1,312	5,252	46,871	52,123	44,699	7,424	97	483	580	453	3,073	2,579	127
Ludhiana	900	6,258	74,197	80,455	79,927	528	144	263	407	307	6,291	5,531	100
Ferozepore	1,613	7,359	44,149	51,508	44,098	7,410	161	346	507	359	35,232	31,504	148
Lahore	1,662	3,589	17,871	21,460	18,528	2,932	90	138	228	134	11,574	8,497	94
Amritsar	1,075	5,318	27,107	32,425	25,065	7,360	199	220	419	322	8,387	3,943	97
Gurdaspur...	2,363	7,604	69,009	76,613	72,454	4,159	251	447	698	479	13,503	10,907	219
Sialkot	2,524	7,381	38,717	46,098	35,665	10,433	101	231	332	180	17,681	4,391	152
Gujranwala	1,395	4,006	14,902	18,908	14,418	4,490	398	450	848	294	48,626	26,587	554
Gujrat	1,431	8,659	31,411	40,070	34,556	5,514	150	256	406	169	3,875	2,987	217
Shahpur	1,134	3,865	15,881	19,746	15,918	3,828	322	182	504	304	29,527	25,785	200
Jhelum	954	5,692	21,456	27,148	21,805	5,343	167	314	481	319	11,735	5,998	162
Rawalpindi	1,174	3,650	30,983	34,633	29,403	5,230	41	255	296	245	13,968	5,177	51
Attock	657	3,093	20,324	23,417	19,211	4,206	144	369	513	347	38,784	10,915	166
Mianwali	441	2,731	21,177	23,908	21,897	2,011	157	292	449	313	14,203	6,705	136
Montgomery	1,392	930	4,408	5,338	4,677	661	89	138	227	146	33,783	36,915	81
Lyallpur	1,152	2,223	16,700	18,923	16,064	2,859	51	92	143	40	2,139	1,622	103
Jhang	986	1,318	9,882	11,200	9,531	1,669	90	343	433	348	24,987	19,551	85
Multan	1,446	626	12,769	13,395	12,341	1,054	201	379	580	345	14,184	5,210	235
Muzaffargarh	937	1,922	22,354	24,276	21,861	2,415	249	740	989	609	47,415	23,194	380
Dera Ghazi Khan... ...	794	2,400	21,454	23,854	19,536	4,318	226	489	715	657	392	379	58
Total ...	35,087	111,058	808,043	919,101	793,535	125,566	4,348	8,409	12,757	8,426	534,195	373,302	4,331

No. IV.

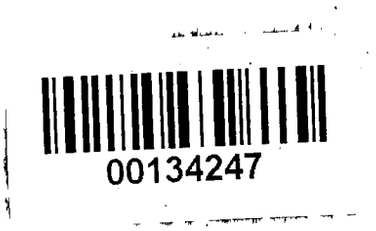
AGENCY DURING THE YEAR ENDING 30TH SEPTEMBER 1910.

15	16	17	18	19	20	21	22	23	24	25	26	27
Detailed Jamabandis.			Number of villages in which crop inspections were checked.			District Kanungo's work.			Boundary and Survey marks.			
									Total repaired during the year.			
Number of villages for which prepared during the year.	Number of villages in which checked by Collector and his Assistants.	Number of jamabandis and annual papers filed by due dates.	By Collector and his Assistants.	By Tahsildars.	By Naib Tahsildars.	Number of days spent on tour.	Number of villages tested.	Number of inspections of Tahsil Offices.	Tri-junction pillars.	Square survey marks.	Traverse points.	Trigonometrical survey pillars.
765	70	765	225	293	567	140	280	2	...	...	...	4
127	51	659	315	289	698	...	...	...	20	...	...	...
335	22	1,250	562	639	679	139	277	10	8	22	...	...
88	...	...	125	85	365	...	...	...	24	...	...	...
396	...	396	243	195	357	79	69	5	...	...	...	...
455	172	454	370	472	445	187	205	10	18	37	...	2
4	...	144	..	...	10	157	24	2	...	...	...	...
115	57	718	47	356	298	276	178	10	644	...	2	...
512	146	512	262	432	688	268	464	8	54	...	...	2
307	242	306	346	477	559	140	353	8	832	...	...	...
652	213	900	193	255	645	165	...	...	142	101	16	2
414	41	1,606	457	492	631	208	332	6	...	1	...	4
364	85	363	152	485	1,223	110	209	5	139	...	...	...
102	35	1,075	99	553	338	140	318	6	...	..	368	9
720	85	720	147	149	1,586	31	...	8	...	...	...	...
624	3	2,519	25	598	805	180	514	6	..	...	...	6
176	7	1,224	50	487	1,102	111	196	6	...	...	...	7
374	51	1,431	52	311	384	158	345	9	...	...	...	7
101	61	101	186	352	630	202	361	8	...	...	...	3
240	121	1,194	196	365	431	187	264	6	...	...	...	2
275	153	273	120	132	216	122	529	5	...	...	...	...
157	31	157	137	286	242	131	167	8	...	...	...	4
110	54	110	224	87	411	135	159	3	...	...	..	...
365	236	365	142	457	529	166	307	8	...	...	...	13
282	17	282	87	171	330	130	338	6	32	39	...	2
243	72	243	382	266	594	135	977	6	3	...	...	1
329	80	329	252	310	1,136	164	116	11	78	...	...	1
237	62	3,868	423	437	1,376	153	220	8	...	...	...	7
236	13	236	508	291	503	185	1,515	6	2	...	...	...
9,105	2,180	22,200	6,327	9,722	17,776	4,199	9,717	176	1,998	200	386	76

STATEMENT No. V.

ANNUAL EXPENDITURE ON THE PATWARI ESTABLISHMENT FOR THE YEAR ENDING 30TH SEPTEMBER 1910.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
District.	Total number of Patwaris including Assistant Patwaris.	Salaries.		Stationery and Printing.		Patwari school.	Survey equipment.	Rewards.	Gratuities.	Other charges.	Total.		Remarks.
		Cost.	Annual average per head.	Cost.	Annual average per head.						Cost.	Annual average per head.	
		Rs.	Rs.	Rs.	Rs.			Rs.	Rs.	Rs.	Rs.	Rs.	
Hissar	331	46,742	141	803	2	33	23	...	370	1,603	49,574	150	
Rohtak	262	36,149	138	692	3	...	293	...	280	9,566	46,980	179	
Gurgaon	332	42,198	127	774	2	...	...	...	210	258	43,440	131	
Delhi	237	38,959	164	909	4	...	...	146	...	2,665	42,679	179	
Karnal	359	50,917	142	1,631	5	...	...	...	150	259	52,957	148	
Ambala	383	51,922	136	698	2	...	3	...	90	439	53,152	138	
Simla	9	1,283	142	13	1	...	...	...	...	40	1,336	148	
Kangra	316	41,549	131	551	2	...	244	...	120	24,532	66,996	212	
Hoshiarpur	481	62,806	131	1,062	2	68	6	...	1,995	476	66,413	138	
Jullundur	418	52,545	126	1,853	4	...	...	...	720	132	55,250	132	
Ludhiana	307	37,975	124	604	2	8	...	...	450	343	39,380	128	
Ferozepur	378	53,380	141	283	1	...	...	...	2,610	661	56,934	151	
Lahore	358	49,703	139	476	1	80	34	...	150	420	50,863	142	
Amritsar	325	45,129	139	980	3	...	200	...	775	824	47,908	147	
Gurdaspur	481	62,303	130	2,068	4	39	7	...	1,110	1,430	66,957	139	
Sialkot	425	60,127	141	1,527	4	...	9	...	450	370	62,483	147	
Gujranwala	364	47,660	131	605	2	...	...	...	450	358	49,163	135	
Gujrat	244	34,488	141	1,052	4	...	26	...	...	319	35,885	147	
Shahpur	291	39,085	134	1,330	5	...	...	...	400	483	41,298	142	
Jhelum	221	30,353	137	232	1	...	...	...	200	500	31,285	142	
Rawalpindi	231	32,998	143	1,490	6	...	...	...	...	422	34,910	151	
Attock	214	30,008	140	120	1	...	...	...	...	267	30,395	142	
Mianwali	186	25,010	134	1,835	10	...	...	...	430	1,138	28,413	153	
Montgomery	217	26,932	124	390	2	184	116	...	120	390	28,132	130	
Lyallpur	283	36,985	131	...	...	...	3	...	...	420	37,408	132	
Jhang	244	32,469	133	139	1	...	...	...	150	383	33,141	136	
Mooltan	363	47,962	132	1,503	4	...	24	...	200	560	50,339	139	
Muzaffargarh ...	348	47,846	137	1,310	4	199	195	...	700	306	50,556	145	
Dera Ghazi Khan ...	189	25,119	133	843	4	8	5	...	...	176	26,151	138	
Director of Land Records' reserve.	...	...	...	3,141	...	...	...	...	...	...	3,141	...	
TOTAL ...	8,797	11,90,602	135	28,914	3	619	1,188	146	12,810	49,740	12,83,519	146	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